



Assessing the Economic Consequences of Widening I-70 for the City of Columbia

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EXECUTIVE SUMMARY

Economic Development Research Group, Inc. (EDR Group) was hired by the City of Columbia Department of Planning and Development to assess the types of economic impacts associated with the construction of MoDOT's proposed widening of I-70 (from St. Louis to Kansas City) in the city's 18-mile corridor.

The analysis coincided with MoDOT's on-going Phase II Environmental Impact Study (EIS) analysis of alternative lane, ramp, interchange, access road designs for the Columbia metro area developed by CH2MHill. The EDR Group was directed to provide guidance to the City on design-related issues prior to MoDOT's selection of preferred design. Specifically the City wanted to be in a position to assess the community impacts related to (i.) economic development implications of the frontage road options, land takings, and project completion; and (ii.) economic and tax revenue impacts of both land takings after the potential relocation of commercial tenants elsewhere in the city, and of construction-related disruptions. The study suggests strategies for the City to consider in proactively managing construction-period access disruptions so that city businesses incur minimal losses or added logistics costs over the duration of the project.

Recommendations concerning the design attributes proposed by CH2MHill for improvements to I-70 include:

- Advanced signage along the corridor to help businesses along the interstate deal with reduced interstate traveler visibility because of elevation aspects of the design.
- An appropriate¹ one-way frontage road design where no access road currently exists can preserve more taxable property than a two-way frontage or collector-distributor road.
- The potential for the free-flow modification to the I-70 /U.S.63 interchange to create a bypass of businesses located near that interchange suggests that the area may be best developed with businesses not dependent on *pass-by* traffic.
- The partial interchange improvement at Fairview, while not able to serve key commercial traffic movements from all directions with respect to I-70, may argue for a Scott's Boulevard Interchange to be added.
- Proposed lengthening of ramps, and their positions, while improving the existing concern of ramp stacking, will challenge first-time or pass-through visitors in reaching abutting traveler services. At minimum advanced signage will be needed.

¹ A combination of a "Texas" turnaround, and/or strategically placed curb-cuts.

- A one-way frontage road design through the triplet area with limited access points will grow local access, support growth of the surrounding business community, and ensure unconstrained movement of emergency vehicles. This allows the city to incrementally develop the back-street system between Providence and the new Business Loop 70 East interchange, ensures no access constraints to developable parcels on Vandiver Dr. or redevelopment of under used parcels on Business Loop 70 East. It also provides comparable performance for the controlling intersections as would a *collector-distributor* approach to the frontage road.

Estimates of key impacts associated with the probable project foot-print are as follows:

Land acquisition for the I-70 right-of-way will require the acquisition of 45 parcels of property which will result in the displacement of 51 existing businesses. Forty-six businesses will lose their buildings and five businesses will lose a significant portion of their parking areas that will render their business operations inoperable as a result. There are 873 full-time equivalent jobs, business sales estimated at \$105 million and \$25.4 million in wages tied to these 51 businesses. The affected businesses and the associated loss of jobs, sales and wages are broken out by type shown in Table ES-1.

Table ES-1: Gross Economic Impacts (in 2003 \$) from Active Commercial Structures Eliminated

| Type of Business where Structures ¹ will be taken for ROW | Number of Businesses | Dislocated Jobs (FTE) | Dislocated Annual Sales | Affected Annual Wages |
|--|----------------------|-----------------------|-------------------------|-----------------------|
| TOTALS | 51 | 872.5 | \$105,314,926 | \$25,409,622 |
| Auto Service | 6 | 22.5 | \$1,748,793 | \$584,391 |
| Commercial-Other | 4 | 206.0 | \$28,812,297 | \$9,117,860 |
| Construction/trades | 5 | 76.5 | \$12,807,771 | \$2,719,734 |
| Eating Establishments | 4 | 112.0 | \$3,607,301 | \$1,062,950 |
| Health Services | 3 | 225.0 | \$16,224,310 | \$7,350,703 |
| Lodging – Motels * | 4 | 62.0 | \$3,459,885 | \$684,002 |
| Retail-Other | 11 | 78.5 | \$12,238,511 | \$1,355,842 |
| Retail-Service Stations | 6 | 32.5 | \$6,962,957 | \$441,391 |
| Retail-Auto Dealers | 3 | 40.5 | \$17,745,936 | \$1,645,861 |
| Misc. Services | 3 | 8.0 | \$556,872 | \$194,175 |
| Warehousing/Distr. | 2 | 9.0 | \$1,150,293 | \$252,713 |

¹ Includes cases where entire parking lot will be eliminated.

FTE = *full-time equivalents*.

* Does not include the 86 room Comfort Inn under construction Fall, 2004

The gross impact on city tax revenues that would have been generated from business activity and property taxes tied to parcels in the right-of-way are shown in Table ES-2.

Table ES-2: Summary of City's Project Related Gross Loss of Annual Tax Revenue

| Annual Revenue Lost Project | City of Columbia |
|-----------------------------|------------------|
| Lost Revenue to City | |
| Non-Property Taxes | \$603,754 |
| Sales | \$445,325 |
| Hotel Occupancy | \$134,085 |
| PILOTs | \$24,344 |
| Property Taxes | \$ 38,382 |
| Commercial | \$ 29,387 |
| Residential | \$ 8,504 |
| Farm | \$ 471 |
| Total All Sources | \$642,116 |

Relocation potential for any of these businesses within the first-year is dependent on the type of customer base served and availability of appropriate sites elsewhere in Columbia. Table ES-3 shows how these 51 businesses are classified with respect to these two criteria.

Table ES-3: Classification of the 51 Displaced Businesses by Customer Base & Relocation Requirements

| No. | Classification of Customer Base and Location Requirements |
|------|--|
| 12 | <u>Highway Access</u> : Depend on I-70 pass-by traffic for their customers and thus locations at frontage roads or highway interchanges. |
| 10 | <u>Highway Visibility</u> : Depend on a regional customer base, requiring highway visibility or signage but not necessarily direct access to pass-by traffic. (This includes 3 furniture stores that also require large parcels and clustering with other regional businesses, and 2 specialized auto parts/service businesses that typically cluster with other automobile related businesses.) |
| (22) | <i>(Subtotal: Businesses requiring a highway corridor location: pass-by traffic, access or visibility)</i> |
| 23 | <u>Arterial Access</u> : Businesses with a local customer base that could be relocated to any suitable parcel with access off an arterial roadway |
| 5 | <u>Auto Related Local</u> : Auto-service or auto retail establishments (not gas stations); some prefer clustering with other auto-related businesses. |
| 1 | <u>Local Other</u> : Establishment(s) requiring a specialized local labor pool and large land parcel |
| (29) | <i>(Subtotal: Businesses not necessarily requiring highway corridor access or visibility)</i> |

Tables ES-1 and ES-2 describe aspects of the *gross* business disruptions because of the project's right-of-way. However based on the classification of businesses shown in Table ES-3, a portion of these businesses can potentially relocate to workable locations in the City. The City's economic risk (termed *net* impacts) is identified after the relocation of as many businesses as possible. The *net impacts* are the economic and tax revenue consequences after successful relocations elsewhere in the city have occurred. These amount to 230 jobs eliminated (out of the gross 873 jobs), tied to a reduction in business sales of \$22.3 million. The extent to which different types of I-70 corridor businesses are likely to relocate is demonstrated in Table ES-4 – which shows the net loss.

Table ES-4: Net Economic Impacts of Business Displacements

| Sector | <i>Dislocated Jobs</i> | <i>Dislocated Annual Sales</i> |
|----------------------------------|----------------------------|--------------------------------|
| Auto Service | 8 | \$ 464,000 |
| Commercial-Other | 31 | \$ 1,828,000 |
| Construction/Trades | 8 | \$ 1,303,000 |
| Eating Establishments | 55 | \$ 1,885,000 |
| Health Service | 0 | \$ 0 |
| Lodging | 50 | \$ 1,712,000 |
| Retail – Other | 40 | \$ 7,513,000 |
| Retail – Gas Service Stations | 22 | \$ 4,241,000 |
| Retail –Auto Dealers | 13 | \$ 2,544,000 |
| Misc. Services | 2 | \$ 0 |
| Warehousing/Distribution | 1 | \$ 427,000 |
| Total Expected Net Impact | 230 | \$ 22,303,000 |

Tax revenues losses from the net impacts of displacement reflect sales tax, hotel occupancy tax, and payments-in-lieu- of taxes (PILOTs) that will be foregone. Table ES-5 shows these annual impacts.

Table ES-5: Net Impact on Annual Business Sales-related Payments to the City of Columbia, in 2003\$

| <i>Annual Net Revenue Lost</i> | | | |
|--------------------------------|------------------------|---------------|----------------------------|
| Sales Tax | Occupancy Tax | PILOTs | Total Revenues Lost |
| -\$97,972 | -\$67,042 ¹ | -\$5,356 | -\$170,370 |

Annual Property tax losses to the city from the affected commercial, residential, and agricultural parcels amount to \$130,510 after businesses relocate elsewhere in the city, and 90 percent of the housing units are accommodated by current development in Columbia. These are summarized in Table ES-6.

Table ES-6: Summary of Net Loss to City's Annual Property Tax Revenue (2003 \$)

| Lost Property Tax Revenue to City | \$ Annually |
|--|--------------------|
| | -\$7,876 |
| Commercial | -\$6,465 |
| Residential | -\$ 850 |
| Farm | -\$ 471 |

The total annual impact on tax payments to Columbia in the short-run is \$178,264 from business payments and property tax losses.

Construction-disruption risk for remaining businesses in the corridor in terms of lost sales (and jobs) is shown in Table ES-7. The set of businesses screened for each defined segment of the corridor were those in the predominant sector (e.g. services, industrial, trade) of that interchange neighborhood. At minimum 65 businesses could experience a shortfall in business activity estimated as \$90.7 million and affecting 1,223 jobs. These impacts should be interpreted as accruing over the entire phasing of the project since segments will be worked on in sequence. The majority of these impacts fall within the traveler-serving sectors (lodgings, restaurants, gas stations).

Table ES-7: Business Risk from Construction-related Disruptions

| Corridor Business Zone | Identified Businesses At Risk | | | Total Businesses "At Risk" | | |
|---|--------------------------------------|---------------------------|---------------------------|-----------------------------------|---------------------|---------------------|
| | Select Businesses Screened | # Traveler-serving | # Access-Dependent | Jobs | Annual Sales | |
| Stadium/Fairview Interchanges | 121 | 6 | 3 | 9 | 112 | \$7,745,000 |
| Creasy Springs/West Boulevard Interchange | 56 | 6 | 4 | 10 | 162 | \$14,867,000 |
| Triplet Interchanges-north | 94 | 8 | 0 | 8 | 201 | \$13,105,000 |
| Triplet Interchanges-south | 55 | 15 | 0 | 15 | 198 | \$13,958,000 |
| Paris Road Cross-Over | 36 | 11 | 1 | 12 | 123 | \$22,229,000 |
| Interchanges 128A and 131 | 26 | 10 | 0 | 10 | 418 | \$18,428,000 |
| Interchanges 131 and 133 | 10 | 1 | 0 | 1 | 10 | \$400,000 |
| Total | 398 | 57 | 8 | 65 | 1,223 | \$90,732,000 |

These impacts can be mitigated by a proactive strategy undertaken by the City of Columbia, the Chamber of Commerce and MoDOT to provide:

- Good alternative Routes that work – not circuitous detours; this may also require interim steps of creating connections among the existing back street system;
- Good Signage in Strategic places – communicating “*Open for Business – Alternative Route Available*”; and
- Possible use of *temporary* One-Way streets.

Potential economic development opportunities as a result of the completed I-70 widening will be stimulated by:

- By providing opportunities to economically “rationalize” development of underused parcels near the highway (i.e., reconfigure buildings and uses to generate greater levels of jobs and business sales, such as along BL70 East), and increase access to those parcels;
- By reducing congestion and improving travel times on the highway, thus making the city a more desirable central Missouri location for people to visit and for industries to locate; and
- By increasing the carrying capacity of I-70 to and from Columbia, and volume of traffic flows through Columbia, sustaining and increasing the potential for economic activities that serve pass-through travelers.

The study concludes with estimates shown in Table ES-8 of potentially achievable employment growth above the 2% annual increases assumed by the Columbia Area Transportation Study Organization (CATSO) for the year 2030. To maximize the business gain from a completed I-70 project, it will be important for local business and city leaders to collaborate in development of improved sites for industrial park sites, commercial office sites and commercial retail sites. That means collaboration and/or cooperation as appropriate to:

- (a) Allow and encourage assembly of sites for larger scale and denser development of these industrial, office and retail activities;
- (b) Provide enhanced local road access to businesses off of interchanges and cross streets;
- (c) Provide attractive landscaping to enhance the quality of life appearance of Columbia and its business districts, to provide an amenity to local residents and to enhance business attraction efforts; and
- (d) Advertise the availability of Columbia’s many industrial parks, office parks and specialty retail districts and their regional accessibility features (along with other features) in venues and media that reach growing and relocating businesses.

Table ES-8: Employment Growth and I-70 Impacts (2005- 2030)

| | I-70 Corridor | Route 763 / Rangeline | Route B Industrial | South US-63 | Central City |
|--|------------------|--------------------------|-----------------------|----------------|-----------------|
| <u>Forecast Employment</u> | | | | | |
| <u>Growth (2000-2030)</u> | | | | | |
| <u>No. Of Employees</u> | | | | | |
| Retail | + 2,453 | +1,311 | +437 | +1399 | +175 |
| Service | +1,997 | +666 | +416 | +998 | +166 |
| Industrial | +316 | +56 | +486 | +372 | 0 |
| Office | +1,058 | +85 | +741 | +904 | +2,269 |
| Total 2030 | +5,824 | +2,118 | 2,080 | 3,673 | 2,610 |
| <u>Developable Vacant</u> | | | | | |
| <u>Acreage w/sewer by 2030¹</u> | | | | | |
| | +3,588 | +867 | +1,653 | +1,446 | +265 |
| <u>Short-Term Loss from</u> | | | | | |
| <u>I-70 Land Takings</u> | | | | | |
| Gross Emp. Loss * | -873 | 0 | 0 | 0 | 0 |
| Net Emp. Loss ** | -232 | 0 | 0 | 0 | 0 |
| <u>Growth from I-70 Traffic</u> | | | | | |
| <u>& Access Improvements</u> | | | | | |
| <u>Potential Employment</u> | | | | | |
| Gain | +700 | + 225 | + 325 | 0 | +80 |

¹Totals reflect all zoning types, not just *commercial*.

* Gross Loss is the total direct number of jobs associated with businesses whose land and buildings will be taken for the expanded I-70 highway

**Net Loss is the expected actual loss after adjusting for the fact that some businesses (particularly small scale, local-serving businesses that do not require highway visibility and direct highway access) can be expected to relocate to other available parcels in the city, if not in their local area. See separate document on land taking impact.

1 INTRODUCTION

This report presents EDR Group's findings related to how the City of Columbia will be affected by MoDOT's proposed I-70 widening. The widening, from Kansas City to St. Louis will affect Columbia along its 18-mile I-70 corridor. The City Planning Department identified several objectives for the study outcome, which included:

- Ways in which specific design elements could either aid/hinder economic development opportunities;
- How much taxable land the project's foot-print would consume and the types commercial activities that would be displaced;
- The potential to relocate displaced businesses elsewhere in Columbia;
- The magnitude of annual, net loss (after relocation) in terms of business sales, jobs and taxes in the city;
- To what extent would construction-related access disruptions impinge upon remaining business around the corridor & what can be done to mitigate these impacts; and
- Identifying future economic development opportunities associated with the improved interstate corridor & steps to ensure they occur.

This study was undertaken while MoDOT's traffic-engineering consultant, CH2MHill, was refining the design alternatives for specific segments along the corridor for their Phase II EIS. Since the EDR Group analysis was reliant on specific milestones from the Phase II study – designs for the preferred alternatives, and results from a business survey – the findings were revised when considerable changes were proposed by CH2MHill.

This analysis also builds on interviews with local area realtors and commercial developers, staff at REDI, the Columbia Lodging Association, the City of Columbia Department of Planning and Community Development and Finance Department, and the Boone County Assessor's Office. Mapping resources were provided by the City of Columbia Department of Planning and Community Development.

This report is organized as follows – Chapter 2 presents *Considerations of Design-Elements*, Chapter 3 focuses on the frontage road issues for the Triplet Area, Chapter 4 presents the *Net Economic & Tax Impacts of the Project's Foot-print*, Chapter 5 presents the *Economic Impacts of Construction-related Disruptions*, Chapter 6 presents *Future Economic Development Opportunities of an improved I-70*, and a concluding chapter summarizes the overall analysis. An appendix is provided which contains supporting maps and documents to the related to the report.

2 CONSIDERATIONS FOR THE CITY OF COLUMBIA PRIOR TO FINALIZING PLANS ON THE I-70 WIDENING APPROACH

Introduction

The purpose of this chapter is to assist the City of Columbia and MoDOT in recognizing potential concerns related to the final design approach for widening I-70. While the identification of the “preferred” alternative (originally anticipated for Jan. 2004) was close but not yet final at the time of this analysis, enough was known about the likely approach to the eastern and western segments of the 18-mile I-70 corridor, along with key elements of the more sensitive central corridor segment, to support this assessment.

This assessment addresses issues and vulnerabilities – now and in the future- for the city’s businesses, residents, and development opportunities. These considerations arise from three distinct periods in the timeline for the I-70 widening:

1. Establishment of foot-print: immediate-term impacts on existing businesses/neighborhoods through right-of-way acquisition;
2. Construction period: since the number of years required & project phasing are not yet known, the issues identified should be interpreted as *global* in nature and not meant to address specific parcels or specific traffic flows; and
3. Project completion: the implications of the improved interstate/interchanges upon completion of construction.

Issues Related to the Project’s Foot-Print

The following observations were made in a general context since the footprint was not considered final at the time of this analysis.

Issue #1. Impaired visibility of remaining frontage road businesses/parcels.

A. The Nature of the Issue: Widening of the interstate from 4 to 8 lanes will create challenges on existing businesses, whether they are in the anticipated right-of-way (fully or partially), or are in the neighborhood of construction. The challenge will also exist for local, and to some extent non-local, customers that continue patronizing specific businesses that remain along the frontage road. Some of the businesses reliant on the interstate for pass-by traffic will consider relocating elsewhere in Columbia to an available parcel meeting as many of the same criteria as their current location as possible. Given that land is scarce in the central part of the corridor (Interstate-70 Sub Area) access may not be what it has currently been for many businesses.

Businesses that will remain (such as along the south-side frontage road between Stadium Boulevard and Creasy Springs Road, and to the east near the triplet interchange development) may contend with loss of visibility by non-local interstate travelers as sightlines diminish as a result of widening the main highway, adding interchanges, and extending ramp lengths. The severity will vary with the elevation along the corridor.

B. What can be done to avoid the issue: Probably little; this is largely inevitable given that there has to be a widening and reconstruction of interchanges.

C. What can be done to mitigate the impact: Advanced signage, notifying travelers of what is ahead, off of each interchange. (In the long-run it might also be useful to develop defined business districts associated with each interchange and its signage.)

Issue #2. A trade-off with frontage road options.

A. Nature of the Issue: A one-way configuration can preserve taxable property or maximize taxable property for future development. Yet one-way frontage road configurations imply a level of access that may not be best suited for all future uses.

B. What can be done to avoid the issue: There are design alternatives to complement a one-way frontage design depending on the type of traffic movement to be accommodated. A “U” or “Texas” turn-around would assist an exiting interstate traveler to reach a location on either, the other side of the interstate, or a location prior to where they exited on the same side. Traffic movements to/from local streets (or local street parcels) and the one-way frontage road (parcels) may be ideally suited for inserting a 2-lane public street from the frontage road to say Vandiver or B70E rather than planning privately owned driveways. These public streets might be developed by property owners looking to benefit by more direct access to the interstate’s exiting traffic in their neighborhood. Clinkscates Road is an example of such a local street joining I-70 Drive Southwest to Worley Street.

A two-way frontage roadway system access provides the greatest access to adjacent businesses and properties. From a business perspective, the two-way frontage road system would be preferable if land takings for right-of-way could be kept to a minimum. Yet one-way frontage roads can be appropriate in areas where there is a limit to the future development potential in the particular segment of I-70, or the current sited business would be permanently displaced from Columbia because of a two-way frontage road foot-print.

In the context of the MO 163/MO 763/new Business Loop 70 East set of interchanges there is currently no frontage road system along I-70. One must consider the value that is gained by introducing one-way pass-by traffic to frontage parcels and perhaps eliminating some traffic using Vandiver Drive to the north as a means of traveling west to Providence Road (MO 163). The distances between these triplet interchanges is relatively manageable for doubling-back on a “Texas” turn-around feature being proposed, or pursuing the insertion of a public street perpendicular to the one-way frontage. Given that up to 5 access points at most could be inserted across the triplet of interchanges, it would likely not discourage the location of select traveler services activities (e.g. gas station, fast food establishment, motel). The next chapter further examines frontage road issues related to the *triplet area*.

C. What can be done to mitigate the impact: Develop a road system of local non-residential streets to use in combination with the one-way frontage road configuration to provide secondary access to frontage road businesses. Currently the commercial activities north of I-70 between Providence Road (MO163) and Rangeline Street (MO 763) lack this type of local street access.

Elsewhere in the central core, as well as the west of the Stadium Boulevard interchange and east of U.S. Highway 63, two-way frontage roads will be maintained or expanded. The higher level of access to property provide by a two-way frontage road system will enhance the future development opportunities in these areas of the I-70 corridor.

Issue #3. Needed free-flow modifications at interchanges create bypass of established business.

A. Nature of the Issue: The desired improvement at I-70/US Highway 63 interchange will reduce the amount of traffic through the existing US 63 connector and bypass existing businesses.

B. What can be done to avoid the issue: Probably nothing. The suggested improvement of making a partial (with respect to the west) fully directional interchange is often required where two interstates (or US HWY) come together. When at-grade signalized intersection cannot provide the capacity to permit traffic to flow at an acceptable level of service (LOS).

C. What can be done to mitigate the impact: The current customer access limitations already experienced by the Home Depot at their Clark Lane location will likely not get any better. Other types of retail businesses (current or future) will not benefit from the larger volumes of traffic forecast to and from the west bypassing these parcels. However given that there appears to be developable commercial acreage in this area, the city could encourage uses such as distribution facilities, industrial, or office space, that are not dependent on pass-by traffic and can deal with the existing connector (operating at an improved LOS) when traveling to/from I-70 E.

Issue #4. Partial interchange improvements may not address key commercial traffic movements from all directions.

A. Nature of the Issue: Truck movements to/from the Rt. B Industrial area from/to St. Louis may eventually overload the existing I-70/US63 connector, or experience logistics delays. Similarly, commercial traffic from Kansas City moving freight to the planned new WalMart at Fairview & Broadway, as well as customers from west of the city limits, will need to rely on the Stadium interchange.

B. What can be done to avoid the issue: In order for the proposed improvements at I-70/Fairview not to overload Fairview Road and the adjacent neighborhoods, the partial ramp addition cannot serve traffic with destinations from or to areas west of the Columbia.

C. What can be done to mitigate the impact: Future consideration of an interchange further west of the proposed Fairview ramps. A new interchange to Scotts Boulevard, would provide full access to I-70 and accommodate the traffic movements unmet at Fairview Road ramps and offer an alternative to travel along the Stadium Boulevard corridor.

Issue #5. Ramps replacing the movements at the current diamond-shaped interchanges are long, and few-and-far between.

A. Nature of the Issue: As drawn, many of the ramps appear to require many travelers to exit as much as one mile in advance of their intended destination along the highway. It appears that a new ramp may be as much as three times the length of the ramp it replaces. This may create challenges on non-local travelers as well as new local street access requirements for backtracking to locations situated off the interstate.

B. What can be done to avoid the issue: Discussions with MoDOT regarding whether the location of specific on and off ramps can be revised and what can be done to shorten the distance traveled on the ramp while still improving the existing situation of unacceptable stacking on ramps at select locations.

C. What can be done to mitigate the impact: Provide travelers way-finding signage to locations situated where they initially enter the off-ramp, and gradually implement a local access system to bring customers to business fronts.

Issue #6. Removing I-70 Access for Business Loop 70 East

A. Nature of the Issue: The proposed alternative removes the existing ramps to I-70 eastbound and from westbound I-70. Access to Business Loop 70 East will be provided by a new full access interchange located at Parker Street west of Route B. The new Business Loop 70 East interchange makes I-70 access to the existing businesses/parcels on the most eastern end of Business Loop 70 less direct for those vehicles approaching Columbia from further east on the interstate.

As there is a longer-term opportunity to re-conceive the type of commercial development the Business Loop 70 East will support. The circuitous access provided through the new interchange may be a barrier for certain types of businesses and therefore constrain efforts to revitalize the existing parcels.

B. What can be done to avoid the issue: Discuss with MoDOT what alternatives can be feasibly considered to direct vehicles on I-70 from the east of US Highway 63 to the eastern end of Business Loop 70; and conceive commercial redevelopment opportunities where this type of access configuration will not be a deterrent to business (office, non-traveler serving businesses).

C. What can be done to mitigate the impact: Provide travelers with improved signage from their available exit back to locations on Business Loop 70 East, and gradually implement a local access system to bring customers to business fronts.

Long-Term Considerations Upon Project Completion

Two-way frontage roads inserted now will serve as a beneficial “placeholder” for eventual development along the interstate in the eastern segment.

Interchange areas should be configured to allow for businesses located right off the interchange, or at the next corner, or around the corner (contingent on improving many local parallel streets) to maximize key business locations.

Effective coordinated signage should support the development of interchange-based commercial districts.

The proposed I-70/US Highway 63 interchange improvements for traffic to and from the west only should benefit local traffic in the free-flow between the city’s residential neighborhoods in the northwest traveling to the southeast. Retail development

opportunities may be eclipsed by the partial bypass nature of the proposed interchange improvement in the direction of the larger traffic volume generation. The city should be aware of this and seek other types of commercial uses that will not be dependent on the amount of pass-by traffic.

Commercial vehicles traveling to and from the Route B Industrial area moving to and from the east would still have to navigate signalized intersections, however if the LOS for the US 63 Connector is significantly improved, this may not be a deterrent.

Augmenting the Stadium Boulevard interchange improvements with a pair of ramps at Fairview Road for travel to and from the east should be the extent of any modification at this location. This will still put into question whether Fairview north of Worley is adequate to handle the change in traffic flows as a result of the single pair of ramps. On the positive side, it alleviates the extent of improvement required on the Stadium interchange, and it can provide needed secondary access to the Columbia Mall and eventual access to adjacent large vacant tracts.

3 FRONTAGE ROAD CONSIDERATIONS FOR COLUMBIA'S TRIPLET INTERCHANGES

Overview

The purpose of this chapter is to further consider frontage road design recommendations for the area of Columbia's I-70 corridor known as the "*triplets*". This portion of the corridor, encompassing 1.6 miles, starts in the west (at the Garth Avenue underpass) Exit 126 (Providence Road), encompasses Exit 127 (Route 763/Rangeline Avenue), and will be anchored by a new location of Exit 128 (Business Loop 70 East) once the Parker Street extension is complete.

At issue is the type of frontage road concept that would be "best suited" to the *triplet* area. The collector-distributor (C-D) system for the "triplets" includes a Single Point Urban Intersection (SPUI) at the Route 763 interchange with I-70. The operation of the SPUI along with the supporting C-D roadway system presents a level of complexity that will challenge driver expectations, as well as restricts access to property and increases emergency vehicle response times. Operationally, the C-D system provides a slightly higher overall level of service (LOS) than the one-way frontage roads.

From the perspective of a driver, the C-D approach contains no curb-cuts, has different types of intersections at cross-streets and moves traffic fast. The one-way (O-W) concept has curb-cuts at specific locations, and moves traffic less fast than the C-D concept. If transportation flow is the priority then the C-D concept would be chosen. If the business community is a priority then the O-W with local access would be preferred. From a community viewpoint, the one-way frontage road system is the alternative that provides the best balance between system capacity on I-70 and its interchanges and meets local concerns for property access and public safety. The one-way frontage roadway system provides an increase in property access which slightly favors this alternative over the CD system. Other factors such as emergency vehicle response times and local traffic movement are also of local importance. The one-way frontage road system provides for better emergency vehicle access to the adjacent properties and vehicle incidents that occur at the interchanges and along the main lanes of I-70. The City of Columbia Fire

Department has indicated a preference for the one-way frontage road system for the "triplets" section of I-70 through Columbia. Operationally, the one-way frontage road system can provide the necessary LOS and capacity to meet forecast needs.

Background

The results contained in the preceding chapter were originally submitted to the City of Columbia Department of Planning and Community Development on February 12, 2004. EDR Group's memo prescribed design-related issues associated with the project for the city to negotiate with MoDOT. One of the recommendations was for the *triplet* area be outfitted with a O-W frontage road with select access points to adjacent parcels or side-streets. Both the City as well as MoDOT representatives for the region were in agreement of this configuration over a C-D concept. The latter at minimum raised concerns of a larger amount of land takings, and more costly to construct, coupled with the fact that there would be no access points to adjacent properties or side streets (private or public).

By late March of 2004, MoDOT's transportation engineering consultant (CH2MHill) refined their design of the C-D system for the *triplet* area and was able to reduce the land takings and the cost to construct to levels comparable to the O-W system. MoDOT's consultant urged the City of Columbia to take another look at whether the C-D system might not be more suitable for the long-term system performance. The City of Columbia asked EDR Group to take responsibility for this re-examination.

Approach

CH2MHill performed additional traffic modeling for the *triplet* area for both the O-W and C-D designs. In addition to reducing both the cost and the foot-print of the C-D design, they were concerned about preserving the overall system's performance vis a vis the interchanges. CH2MHill concluded there was the potential that the O-W frontage road design with limited access points could create traffic conditions that would cause performance to fall below the targeted LOS (D). Their conclusion was that by 2030, this portion of the I-70 corridor system would experience congestion delays at the interchanges when volumes exceeded the capacity of the intersections by 15 percent.

The EDR Group requested to examine the traffic modeling data (see Appendix, Chapter Two - Exhibit B for the summarized results and the accompanying memo from CH2MHill) as the first step in reconsidering the viability of the O-W frontage system for the *triplet* area. After studying the data and the qualifying assumptions for an understanding of what the traffic implications might dictate for frontage road design, EDR Group then considered a number of other factors in order to address for the city whether "no access points between the 3 interchanges (e.g. the C-D design)" was indeed better than "limited access points".

In the event the traffic data do not make a compelling case for the superiority of the C-D design for the frontage road, then issues concerning community needs related to access for existing businesses (for customer pass-by, ease of delivery), access to zones of future commercial development, and emergency vehicle routings must be considered.

Traffic Data Implications

EDR Group asked that CH2MHill summarize the 2030 results of their traffic modeling by providing volume, capacity, and LOS (or speed) for a peak hour for each of the following triplet area treatments:

- Two-way frontage with local access
- One-way frontage with local access
- Collector- Distributor (a faster O-W frontage with no local access)

The data were originally requested for two segments of the frontage road – Providence to Rt763/Rangeline and Rt763/Rangeline to BL 70 East.

CH2MHill provided data specific to each exit (3 in all) broken into the number of controlling intersections (typically 2 per exit, the exception being the Rangeline exit under the C-D option where there is just a single controlling intersection for both north and south sides). For the two-way frontage road alternative, CH2MHill did not provide the data since it was previously deemed “infeasible”. It is important to note that for the O-W design CH2MHill only provided the traffic data without access points on the basis that the number and location of such access points is not known. As a result, the projected traffic numbers for the O-W alternative represent “base case” volumes and do not account for added volume that might be attributed to the access points.

CH2MHill did, however, subsequently provide a schematic of possible access points for the city to be able to deliberate this issue further (see Appendix, Exhibit C). The potential related to these access points will be discussed in the next section after the traffic data is interpreted.

Table 3.1: Intersection Level of Service Performance for the Year 2030

| Frontage Design | Providence | | INTERSECTION Rangeline | | BL 70 East | |
|-----------------------|--|---------------------------|-------------------------------------|------------------|---------------------------|---------------------------|
| | N | S | N | S | N | S |
| O-W no local Access | Comparable | Comparable | V/C ratio = .93 | V/C ratio = .99, | Comparable | Comparable |
| Collector-Distributor | v/c ² ratio (.73) and LOS=C | v/c ratio (.86) and LOS=B | LOS=C | LOS=C | v/c ratio (.78) and LOS=B | v/c ratio (.72) and LOS=B |
| | | | Shared intersection V/C = .78 LOS=C | | | |

Source: CH2MHill, St. Louis. MO

For each intersections associated with the *Providence* and *BL 70 East* exits the data suggest that either frontage road design format can deliver the same performance. For *Rangeline* there would be a single controlling intersection under the C-D frontage road design whereas the O-W alternative would have a north and south set of intersections. If these are indeed comparable, then each intersection in the set of *Rangeline* intersections operates closer to capacity than the single controlling intersection that is part of the C-D alternative.

The above data offer limited conclusions since by the fact that CH2MHill assumed away the existence of access points, the O-W alternative is just a slower variant of the C-D alternative. However there are some important conclusions that CH2MHill includes in the memo that accompanied the traffic data (see Appendix, Exhibit B).

“We want to be very clear about what that additional 15% [volume] will do. Any more than an additional 15% is what will cause the system to operate worse than the established threshold of operational acceptability (LOS D) at the controlling intersection in the [O-W] system, i.e. the system is only as effective as the worst intersection in the system. Also, it is important to clarify that the additional 15% is added to the base condition for the one-way system as described in note # 7 above. It's worth mentioning that the C-D system as laid out in the reasonable range of triplet alternatives was only capable of absorbing an additional 20% [volume].”

It appears then that the real distinction regarding how much added volume can be accommodated on either frontage road design, while maintaining the desired LOS, is 15% versus 20% for the O-W and C-D alternatives respectively. Next for consideration are the potential access points that would be part of the O-W frontage road alternative.

² Volume-to-capacity

Potential Access Points and Future Economic Development

CH2MHill identified up to 11 potential locations for access off the O-W frontage road in the *triplet* area considering both north and south sides. These potential locations do not exceed a 15' grade limit between the frontage road and the adjacent property (a development criterion) and they meet MoDOT criteria related to traffic operations and safety. CH2MHill then identified seven "recommended" locations from these 11 potential access points (see map in Appendix – Chapter 2, Exhibit C).

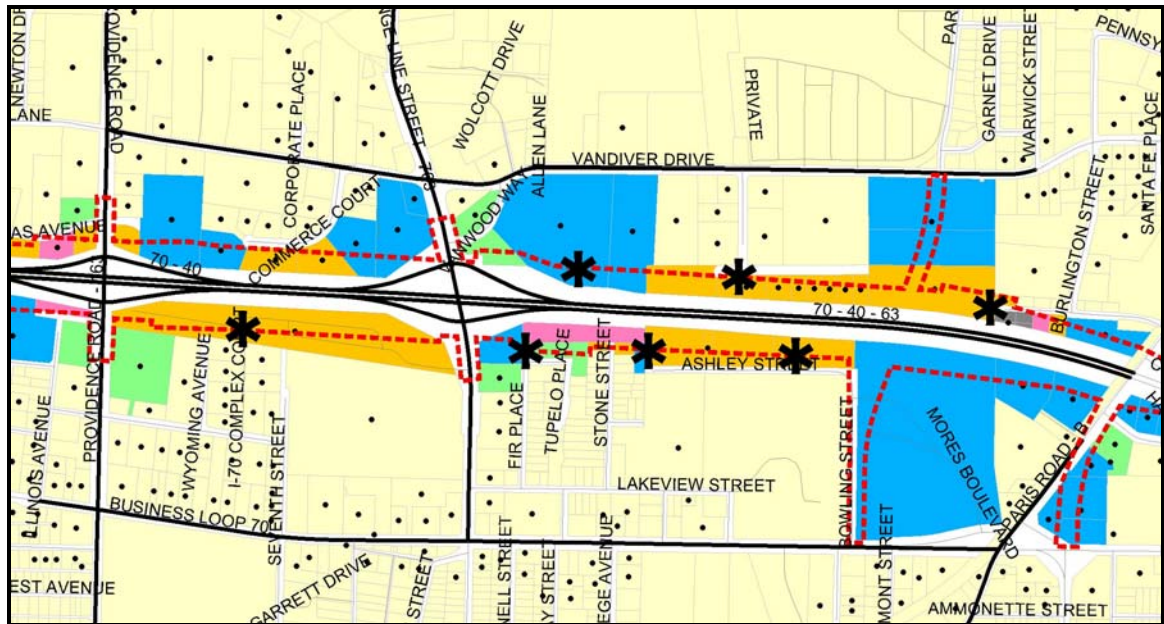
The spatial breakdown of access points is summarized in the exhibit below.

Table 3.2: Recommended Access Points

| | SEGMENT | | | |
|-------------|-------------------------|-------|-------------------------|-------|
| | Providence-to-Rangeline | | Rangeline-to-BL 70 East | |
| | North | South | North | South |
| Potential | 2 | 2 | 4 | 3 |
| Recommended | 0 | 1 | 3 | 3 |

To place the number of recommended access points into a spatial context of existing streets, and businesses, the following exhibit provides a description of the potential abutters and potential connections that could be envisioned from the access points.

Figure 3.1: Potential Access Point Locations on One-Way Frontage Road System



Access Points to the One Way Frontage Road Along I-70

North side of I-70 between Providence and Rangeline

No access points – section does meet traffic criteria or 15-foot difference in grade

North side of I-70 between Rangeline and Bus Loop 70 East

1st access point – would connect to Ramada Inn property. Access to Vandiver Drive would be through their private parking lot. Small amount of vacant land exists between parking lot and I-70.

2nd access point – would connect to the back of two car dealerships. If the access could be connected to Heriford Road, traffic could use Westfall Drive to reach Vandiver Drive. However, this connection would be blocked by a new building which has recently been constructed at the west end of Heriford Road.

3rd access point – would connect to the east end of Heriford Road. This access point is in close proximity to the new interchange road which would connect I-70 to Vandiver Dr.

South side of I-70 between Providence and Rangeline

1st access point – would connect to a private road in a mobile home park. Currently the homes in the park are being removed. Most of the mobile home park property is within the proposed right of way of I-70. Land use south of the access point consists of a bowling alley, warehouses and construction service businesses.

South side of I-70 between Rangeline and Bus Loop 70 East

1st access point – would connect to Fir Place. Fir Place connects to Lakeview Avenue which connects to Bus Loop 70. There are numerous residential dwellings east of Fir Place.

2nd access point – would connect to the west end of Ashley Street. Most of the property north of Ashley Street is within the proposed right of way of I-70. The city power plant and public works facility are located south of Ashley Street.

3rd access point – would connect to the east end of Ashley Street. This access point is in close proximity to the new interchange road which would connect I-70 to Bus Loop 70.

While the City's access street system is not as developed for the triplet area as it could be, the Figure 3.1 illustrates that there are opportunities to connect frontage road movements to and from areas characterized by either (a) concentrations of business activity (e.g. Vandiver Drive) or (b) future commercial re-development (e.g. Business Loop 70 East). This is not trivial since the available commercial opportunities on Vandiver Drive and the Business Loop 70 East are greater than that will be adjacent to the frontage roads.

Conclusions

While many property owners/existing commercial occupants abutting today's I-70 within the *triplet* area have long dealt without any type of frontage road, the issue remains one of balancing the anticipated performance at critical interchanges with access-connectivity benefits for the roadway users. Some of these users are the existing businesses and residents in Columbia (particularly in the Interstate-70 sub-area). Some of these users are first-time travelers to or through Columbia and ease of arriving at a destination decides if the meal or hotel room is fulfilled in Columbia or not. And some of these users are the future businesses that Columbia is hoping to attract and grow, whether they are traveler-serving or highway-reliant for moving supplies and goods to and from their locations. These access points and their initial connections are a step towards addressing the minimal back-street system that is characteristic of this portion of Columbia's I-70 corridor.

Much of the limited vacant commercial use lands along the frontage will be consumed by the project's right-of-way. The city is most interested in utilizing the development assets they currently have to accommodate business growth before considering a process to annex contiguous land on the periphery of the current city limits from the county. It would seem that to capitalize on those commercial opportunities on Vandiver Drive, and Business Loop 70 East, access facilitated from the frontage road would be a benefit.

One last point should be made. CH2MHill used a 15-foot elevation criterion as part of their selection process for potential access points. They also indicate that this is not to be construed with what future developers may choose to do. A case in point is on the north side, between Providence Road and Route 763. Apart from the fact that there are no city streets between Vandiver Dr. and the future frontage road, two possible access point locations are eliminated because of elevation concerns. Should a developer conceive a means to working with the elevation characteristics of one of the sites, access could then be established with Commerce Court (a private-road, and home to several businesses) and Vandiver Drive. Several abutting structures are ear-marked to be eliminated by the project's right-of-way which would make this option more feasible.

The EDR Group's analysis confirms that there is an essential trade-off between frontage road speed and access to area businesses while also safeguarding public safety concerns regarding emergency vehicle access. The finding is that there appears to be minimal difference in the system performance as captured by CH2MHill between the O-W and C-D frontage road designs. While there is some risk in decision-making that "stakes it all" on the traffic data, especially since CH2MHill held traffic demand fixed, the C-D design eliminates some opportunity for the city to grow local access, support growth of the surrounding business community, and ensure unconstrained movement of emergency vehicles through the triplet area.

4

COLUMBIA'S ECONOMIC & FISCAL IMPACTS FROM THE I-70 WIDENING

Overview

This chapter presents the economic and fiscal impact findings related to the potential I-70 widening through Columbia. The predominant impacts described below are related to commercial properties that will be affected by the project's anticipated right-of-way acquisitions and the potential for these businesses to successfully relocate elsewhere in the city. The taking of residential properties is addressed in the context of property tax implications for Columbia.

The potential for economic and fiscal impacts on the city as a result of construction disruptions is addressed in the following chapter.

Summary of Findings

Current engineering designs lead to an estimate that 45 parcels of land with 51 business establishments will be needed to make room for the expanded I-70 alignment. These 51 businesses represent 873 full-time equivalent jobs in Columbia, generate \$105 million of business sales annually and tax payments to the city worth \$1.1 million (sales and property). A detailed analysis indicates that 79% of these jobs and 78% of the business sales are likely to shift to other locations within the city, while the remainder (representing 230 jobs and \$22 million of business sales) is likely to be lost due to closure. The short-term tax impact on the city is \$279,947. In the longer term, however, most of this loss will be offset by growth of existing and new businesses.

Approach

Economic impacts are reported at an aggregate level defined as any of 11 broad industry groups, and focus on the subset of all commercial properties in the foot-print of the widening that are Commercially Active and will have at least one structure taken, or an elimination of a business' parking lot (see Appendix, Exhibit D for listing of affected

business parcels³). Economic impacts are stated in terms of the annual loss of jobs, and related business sales, and payroll, if no relocation occurs in the city. Those commercially active properties where only limited land may be acquired for the right-of-way (not the parcel's buildings, nor an entire parking lot) are not included in the economic impacts reported below. This is based on the understanding that business operations (jobs) are affected when a building will be acquired, not when the corner of a parking lot will be removed.

The City of Columbia's fiscal impacts (reported in 2003 \$) are comprised of (a) annual property tax losses on the affected portion of any parcel in the foot-print – active, vacant, commercial, residential or agricultural, regardless of whether the acquisition is for land only, or involves a structure; and (b) annual losses in hotel occupancy tax, sales tax, and payments-in-lieu-of-taxes (PILOTs) arising from the mix of commercial properties in the project's right-of-way. A residential property in Columbia is taxed at \$6.31 per \$100 of assessed value. For commercial properties in the city the total is \$6.92 per \$100 assessed value due to a surcharge of \$0.61 which replaces a tax on merchants and manufacturers. These rates reflect full, county-wide taxing jurisdictions. The allocation of property taxes per \$100 of assessed value is as follows: city government receives \$0.41, Columbia School District receives \$4.94, Library districts (Columbia and Boone County) collect \$0.63, Road/Bridge fund receives \$0.05 and State/County/Group Home receives \$0.28 per \$100 of assessed value (see Appendix – Exhibit A).

The city's Planning Department provided appraisal values for the parcels under consideration. While these can easily be converted into assessed residential or commercial values, the Boone County Assessor's Office provides *effective* tax rates for property in the city based on the appraised values. These are 0.07% farm, 1.2% residential and 2.2% commercial.⁴

Other residence-based taxes (e.g. utility gross receipts tax, motor vehicle purchase tax) would only be jeopardized if the city's housing market could not accommodate relocation of current residents. This would be the case created by a tight rental market and shortage of developable land that is eligible for residential zoning. In discussions with the Columbia realtors and city officials these conditions are not present.

Background Perspective. The expanded right-of-way “footprint” for I-70 and its associated interchanges and frontage roads will require the purchasing or taking (with compensation) of some properties adjacent to the existing highway and its frontage roads. The impacts fall into three categories:

- **Gross Impact:** The “gross impact” represents the immediate impact on affected properties – the loss of land, and the loss of the jobs and income that are generated from businesses located on those properties. It represents the total count of land and

³ For a listing of affected parcels containing public-property, or non-profit activities, see Appendix B.

⁴ Per Mr. Ken Mohr, Boone County Assessor's Office.

business activity affected, before allowing for the possibility that some of the business activity, its jobs and its tax generating capacity will relocate within the city, or elsewhere in the county.

- **Net Impact:** The “net impact” represents the likely short-term loss of business sales, jobs and income associated with those affected businesses that close rather than just relocate elsewhere within the city. The magnitude of direct impacts depends critically on three factors: (a) the nature of the directly affected businesses and their ability to function elsewhere, (b) the availability of appropriate sites and buildings elsewhere within the city, which could house these businesses, and (c) the degree of support or difficulty that affected businesses experience in trying to find and secure new locations. The analysis examines these three factors to estimate the likely magnitude of net impacts.
- **Long Term Impact:** The “long term” impact represents the likely effect on the city’s business sales, jobs and income after adding an allowance for the likelihood that at least some of the lost business activity will be replaced by expansion of other existing businesses or initiation of new businesses coming in. The analysis also examines this issue.

Results

Gross Impact: Current engineering designs indicate that 44 commercial properties in Columbia, home to 51 business establishments, will need to be displaced to make room for the expanded I-70 alignment. This count was made by Economic Development Research Group on the basis of maps showing the footprint of the planned construction provided by the Missouri DOT’s engineering/design consultant CH2MHill. A business was judged to require relocation if land taking for the widening project requires the taking of a building structure or reduces the parking area to the extent that the business cannot function.

Figure 4.1: Approximate Locations of 44 Potentially Displaced Businesses & Government Facilities Within Columbia

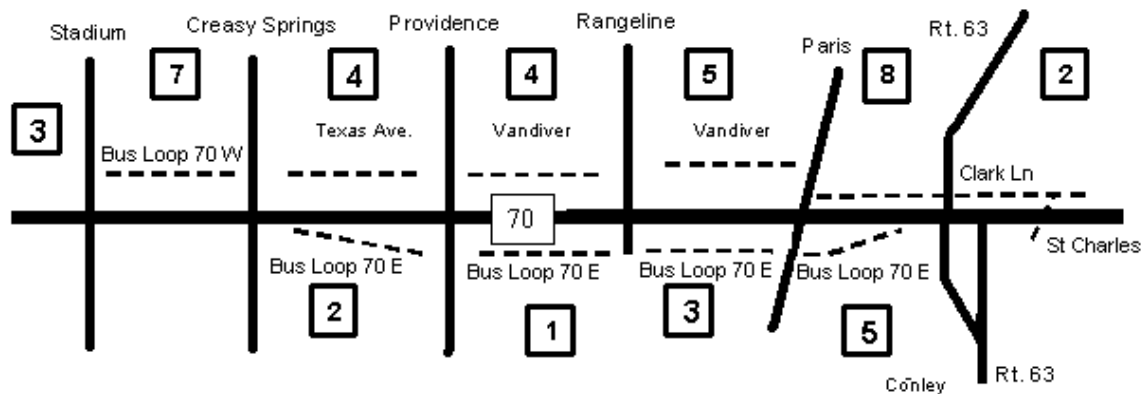


Figure 4.1 illustrates the spatial dispersion of the displaced businesses along Columbia's I-70 corridor. It is also notable that these businesses are widely scattered, rather than representing the elimination of any particular retail activity center.

Altogether, these 51 businesses have estimated business sales of \$105.3 million/year, supporting approximately 873 full-time equivalent jobs with \$25.4 million of wages. These values represent the gross impact, which is the total amount of business activity that is affected, before allowing for the possibility that some of it is likely to relocate within the city.

A categorization of these businesses is shown in Table 4.1. It shows that they represent a wide range of different types of business activity, including auto sales, gas stations, restaurants, hotels, other service businesses, retail and warehousing activities.

Table 4.1: Gross Economic Impacts from Active Commercial Structures Eliminated by Acquisition for I-70 Right-of-Way (2003 \$)

| Where Structures ¹ will be Taken | Businesses | Dislocated Jobs (FTE) | Dislocated Annual Sales | Affected Annual Wages |
|--|------------|--------------------------|----------------------------|--------------------------|
| TOTALS | 51 | 872.5 | \$105,314,926 | \$25,409,622 |
| Auto Service | 6 | 22.5 | \$1,748,793 | \$584,391 |
| Commercial-other | 4 | 206.0 | \$28,812,297 | \$9,117,860 |
| Construction/trades | 5 | 76.5 | \$12,807,771 | \$2,719,734 |
| Eating Estbl. | 4 | 112.0 | \$3,607,301 | \$1,062,950 |
| Health Services | 3 | 225.0 | \$16,224,310 | \$7,350,703 |
| Lodging | 4 | 62.0 | \$3,459,885 | \$684,002 |
| Retail-other | 11 | 78.5 | \$12,238,511 | \$1,355,842 |
| Retail-service stations | 6 | 32.5 | \$6,962,957 | \$441,391 |
| Retail-Auto Dealers | 3 | 40.5 | \$17,745,936 | \$1,645,861 |
| Misc. Services | 3 | 8.0 | \$556,872 | \$194,175 |
| Warehousing/Distr. | 2 | 9.0 | \$1,150,293 | \$252,713 |

¹ Includes cases where entire parking lot will be eliminated.

Wages are calculated using the 2001 CBP Data for Boone County, and re-stated in 2003\$.

Sales data are estimated using the [Business Receipts/Employment] by sector as reported in the 1997

Economic Census for Boone County, and re-stated in 2003\$. For *Commercial-Other* an adjusted [Business Receipts/Employment] for *F.I.R.E.* is applied *without* the influence of the *Real Estate* sector.

FTE = *full-time equivalents*.

The ability to relocate some of these commercial activities onto suitable alternative sites in Columbia will mitigate these annual economic losses. The *net* economic impacts are discussed in the section that follows.

It is important to keep in mind that there are other commercial parcels that may lose significant, non-structural aspects of the parcel and it will be on a business-by-business basis as to whether normal business operations can continue from the existing parcel address. Any dislocations as a result of these decisions are not included in the results of this chapter.

Annual Sales Tax Losses

A portion of the affected business sales (\$) shown in Table 4.1 above, represents taxable activity for the city, with respect to sales tax, occupancy tax, and payments-in-lieu-of-taxes (PILOT). Table 4.2 shows the annual loss in city revenues only (this excludes county or state portions of the tax) as a result of a taxable business activity interrupted by a structure being taken, or in a few cases, parking lots being eliminated.

Table 4.2: Gross Annual Sales Tax Revenues Interrupted by I-70 Right-of-Way Acquisitions

| Project Related Revenue to Loss | City of Columbia |
|---------------------------------|------------------|
| Non-Property Taxes | |
| Sales Tax | \$445,325 |
| Hotel Occupancy | \$134,085 |
| PILOTs | \$24,344 |
| Total: All Sources | \$603,754 |

To the extent any of the taxable business activities can be relocated elsewhere in Columbia, then some if not all of that particular business' tax revenue generation will be restored to the city's coffers.

Annual Property Tax Losses

Property tax losses are calculated using the method of applying the effective county tax rate on appraised value (presented above under *Approach*) for each class of property presented. City government revenues share is approximately 6% of the commercial property tax and 6.5% of the residential taxes generated. The majority of these tax payments fund activities within the city, starting with public schools, and the city library.

Commercial Property

This property tax assessment considers instances where any commercially appraised property is affected – active *or* vacant, structure acquired *or* solely land. Table 4.3 presents a summary of the affected commercial properties, and the stranded property tax revenue as a result of *right-of-way* acquisitions.

Table 4.3: Gross Annual Property Taxes Lost for Parcels Appraised Commercial and Acquired for I-70 Right-of-Way

| | |
|---|------------------|
| Parcel Square Footage Commercial Structure* Taken | 11,926,468 |
| Building Appraised Value | \$18,083,470 |
| Land Appraised Value | \$7,512,640 |
| Total Appraised Value | \$25,596,110 |
| Annual Property Taxes Foregone Commercial Structure Taken | |
| Structure Alone | \$397,836 |
| Based on Entire Parcel Value | \$563,114 |
| Parcel Square Footage Commercial Land** Taken | 2,434,434 |
| Land Appraised Value | \$4,556,500 |
| Annual Property Taxes Foregone Commercial Land Taken | |
| Land Alone | \$100,243 |
| Project Related Annual Property Tax Loss for All Taxing Entities¹ | \$498,079 |
| City of Columbia Portion of Lost Revenue | \$29,387 |

* includes structures on vacant commercial vacant parcels

** includes 22 vacant commercial parcels with a total of 1,094,142 square feet. Appraised value \$1,334,900

¹ Includes all tax revenues for the City of Columbia, Boone County, Columbia Public Schools, Library, County Road and Bridges, and State of Missouri

Apart from this loss of current fiscal benefit, is the extent to which *vacant* commercial parcels will be absorbed by the *right-of-way* and no longer be part of the inventory of future developable real estate assets for the city.

Residential Property

Table 4.4 summarizes the taking of residential properties along the foot-print and the property taxes that would be eliminated as a result. Relocation of multi-unit dwellings and mobile home parks to other areas in Columbia may have more challenging parcel requirements than the relocation of single-family dwellings. However based on discussions with area realtors, there is ample investment underway to absorb households wanting to remain in Columbia, as well as parcels designated for residential development in the city's Metro 2020 Plan. The city should be able to regain these tax dollars in the near-term.

Table 4.4: Gross Annual Property Taxes Lost for Parcels Appraised Residential Acquired for I-70 Right-of-Way

| | |
|---|------------------|
| Parcel Square Footage Residential Structure Taken | 4,548,562 |
| Building Appraised Value | \$10,046,860 |
| Land Appraised Value | \$1,309,630 |
| Total Appraised Value | \$11,356,490 |
| Annual Property Taxes Foregone Residential Structure Taken | |
| Structure Alone | -\$120,562 |
| Based on Entire Parcel Value | -\$136,278 |
| Parcel Square Footage Residential Land* Taken | 2,118,286 |
| Land Appraised Value | \$856,048 |
| Annual Property Taxes Foregone Residential Land Taken | |
| Land alone | -\$10,273 |
| Project Related Annual Property Tax Loss for All Taxing Entities¹ | \$130,835 |
| City of Columbia Portion of Lost Revenue | \$8,504 |

* includes residential vacant parcels

¹ Includes all tax revenues for the City of Columbia, Boone County, Columbia Public Schools, Library, County Road and Bridges, and State of Missouri

Agricultural Properties

Table 4.5 summarizes the taking of farm properties along the foot-print and the property taxes that would be eliminated as a result. There are no structures ear-marked for acquisition on farm-zoned parcels.

Table 4.5: Gross Annual Property Taxes Lost for Parcels Appraised for Agricultural Acquired for I-70 Right-of-Way

| | |
|---|----------------|
| Parcel Square Footage Agricultural Structure taken | 0 |
| Building Appraised Value | NA |
| Land Appraised Value | NA |
| Total Appraised Value | NA |
| Annual Property Taxes Foregone Agricultural Structure Taken | |
| Structure Alone | NA |
| Based on Entire Parcel Value | NA |
| Parcel Square Footage AGRIC Land* Taken | 3,508,271 |
| Land Appraised Value | \$1,121,473 |
| Annual Property Taxes Foregone Agricultural Land Taken | |
| Land alone | \$7,850 |
| Project Related Annual Property Tax Loss for All Taxing Entities¹ | \$7,850 |
| City of Columbia Portion of Lost Revenue | \$471 |

¹ Includes all tax revenues for the City of Columbia, Boone County, Columbia Public Schools, Library, County Road and Bridges, and State of Missouri

The mix of parcels (including farm-vacant) affected by the right-of-way is summarized in Table 4.6, along with associated business tax payments on the commercial parcels.

The annual total of property taxes lost to the city is -\$38,382 in 2003 dollars.

Table 4.6: Summary of City's Project Related Gross Loss of Annual Tax Revenue

| Annual Revenue Lost Project | | City of Columbia |
|-----------------------------|-----------------|------------------|
| Lost Revenue to City | | |
| Non-Property Taxes | | \$603,754 |
| | Sales | \$445,325 |
| | Hotel Occupancy | \$134,085 |
| | PILOTs | \$24,344 |
| Property Taxes | | \$ 38,382 |
| | Commercial | \$ 29,387 |
| | Residential | \$ 8,504 |
| | Farm | \$ 471 |
| Total All Sources | | \$642,116 |

Net Impact Regarding Displacement of Commercial Activities: If all of the 51 affected businesses were to close up shop, then the previously-discussed “gross impact” would be a good measure of the loss to the City of Columbia. Based on EDR’s experiences elsewhere, this is not likely to be the case. The process of estimating “net impact” is therefore most important as a measure of the likely short-term (first year) economic impact of the land takings. EDR identifies the likely nature of this “net impact” by examining: (a) the nature of the affected businesses, (b) the availability of appropriate sites and buildings elsewhere, and (c) the degree of difficulty that affected businesses may experience in securing new locations.

(a) Nature of the Affected Businesses: To identify how the affected businesses are likely to respond, the project staff relied on a survey of corridor businesses conducted by Louis Berger Associates, and additional interviews of real estate and business organizations conducted by staff of EDR Group and AEG. This involved two steps: (1) Each type of business was classified by the degree to which it depends on pass-by traffic, highway visibility or highway access for its customer base; and (2) Each classification of highway dependence was rated by risk (where a low risk indicates that the business is likely to relocate elsewhere within the City of Columbia, while a high risk designation means that there is a greater possibility that the business will have difficulty relocating in the city). The classification includes the following key considerations:

- *Pass-by traffic dependent businesses.* Fast food restaurants and gas stations depend on pass-by traffic volumes with easy in/out access. They depend on impulse decisions by drivers and cannot survive at sites with lesser levels of traffic or more difficult access. Unless there are nearby vacant sites that are available to offer the same good freeway visibility and frontage road access, these business establishments are likely to disappear.
- *Other freeway dependent businesses.* Hotels and motels also depend on close access from the highway, though most of their customers make advanced reservations rather than spur-of-the-moment impulse decisions by drivers.

However, unless new sites are immediately available with equal highway access, these businesses are also quite likely to close up and not immediately relocate elsewhere.

- *Regional Customer Base.* Some furniture, auto sales and major retailers depend on a regional customer base. They do not necessarily require direct pass-by access, but they tend to need highway visibility with some reasonably straightforward access from the highway. Distribution and warehousing businesses do not require visibility, but also tend to require some reasonably straightforward access from the highway. These businesses are thus at moderate risk of being lost, since they have location requirements that are not as stringent as those of traffic dependent businesses (previous category), but more stringent than those of the local-serving businesses (next category).
- *Local Customer Base.* Those stores, restaurants and consumer services (such as health services, automobile parts and repair, electrical and plumbing/heating contractors) that serve a primarily local customer base need to be located within locations at or near major arterials that are accessible to local residents. These businesses may or may not be currently located along freeway frontage roads, but they actually do not depend on freeway visibility or pass-by traffic for most of their sales. They are thus likely to relocate elsewhere within the city if appropriate sites exist.
- *Local Specialty Skills.* Manufacturers and services that require skilled labor tend to locate within urban areas that are accessible to universities and a skilled local workforce. These types of businesses have a strong preference to remain in urban areas that provide the necessary skilled workforce, and are also likely to remain within the city as long as they can find a site meeting their land and access requirements.
- *Clustering preference.* Some businesses tend to cluster together. Fast food restaurants and gas stations often cluster, largely because they share the same need for pass-by traffic. Furniture stores and automobile sales sometimes clusters along routes that are accessible to regional clientele. In all of these cases, the clustering can be beneficial because they allow these businesses to feed off of shared (pass-by or regional) clientele. However, this preference for clustering is an additional challenge for relocation of these types of business activity.

Based on these considerations, the displaced businesses were classified in terms of their customer base and relocation requirements. The results are summarized in Table 4.7

Table 4.7: Classification of the 51 Displaced Businesses, by Customer Base & Relocation Requirement

| Classification of Customer Base and Relocation Requirement |
|---|
| <p><u>Highway Access</u>: Depend on I-70 pass-by traffic for their customers and thus locations at frontage roads or highway interchanges. 12 businesses affected</p> <p><u>Highway Visibility</u>: Depend on a regional customer base, requiring highway visibility or signage but not necessarily direct access to pass-by traffic. (This includes 3 furniture stores that also require large parcels and clustering with other regional businesses, and 2 specialized auto parts/service businesses that typically cluster with other automobile related businesses.) 10 businesses affected</p> |
| <p><i>22 Businesses affected requiring a highway nexus: pass-by traffic, access or visibility</i></p> |
| <p><u>Arterial Access</u>: Businesses with a local customer base that could be relocated to any suitable parcel with access off of arterial roads. 23 businesses affected</p> <p><u>Auto Related Local</u>: Local auto-service or auto retail establishments (not gas stations); some prefer clustering with other auto-related businesses. 5 businesses affected</p> <p><u>Local Other</u>: Establishment requiring a specialized local labor pool and large land parcel. 1 business affected</p> |
| <p><i>(29) (Subtotal: Businesses not necessarily requiring I-70 access or visibility)</i></p> |

(b) Availability of Appropriate Sites for Relocation: To identify the availability of appropriate sites elsewhere, staff of EDR Group worked with the City of Columbia to identify and map currently vacant land parcels and buildings. Of course, the currently vacant land and buildings represents only a minimum estimate of the availability of alternative sites for business relocations. There is always additional turnover of land and buildings over time, as some businesses close or move out and some properties are resold, re-zoned, and redeveloped for higher intensity of use. Thus, in the longer term, even more sites may be available for business relocation. Based on this analysis, the following findings emerged:

- *Available Sites within the City:* Altogether, the City of Columbia has ample sites to accommodate local-serving businesses that need to locate within reasonable access of major arterials but do not necessarily require locations along or nearby I-70.
- *Available Sites along Frontage Roads:* The new, expanded I-70 will create little or no new frontage road sites for businesses, and existing frontage roads have few current vacancies. In addition, one-way frontage road access in the future may be perceived as a site-specific constraint to prospective business. The conservative assumption is that most displaced businesses that require frontage roads for pass-by traffic will end up closing up and not relocating elsewhere.

- *Available Sites with Highway Visibility and/or Regional Access:* There are some existing vacant land parcels along local roads parallel to I-70 (such as Texas Ave., Vandiver Dr., and the Business Loop) that can accommodate regional-serving businesses. In addition, some regional businesses may choose to locate on available vacant and under-utilized land along interchange roads such as Stadium, Creasy Springs, Providence, Rangeline and U.S.- 63. For this study, the assumption is that some regional-serving businesses will relocate along these routes, though more end up closing.
- *Redevelopment of Business Loop 70:* The new, expanded I-70 footprint and interchange designs will also create important new opportunities for the “Business Loop 70 East” and “Business Loop 70 West” corridors to redevelop and evolve towards more intensive business activities. These corridors can then accommodate even more regional-serving businesses that require easy highway access. With the addition of highway signage to promote their traveler services and easy on/off access, the Business Loop can evolve in its de facto role as a frontage road, i.e., routes serving the food and fueling needs of pass-by highway traffic.

For purposes of this study, however, the conservative assumption is that the Business Loop 70 will not serve as a center for highway-dependent traffic in the short run. It should be noted that it has a substantial opportunity to development as a regional business center for highway dependent businesses, but that this evolution will depend on a longer-term process involving substantial business cooperation and local government support.

(c) Ease of Businesses Securing New Sites: As previously noted, there are some vacant and potentially re-developable sites that can in theory provide reasonable access off of I-70, and in some cases also visibility and/or pass-by traffic. However, the adequacy of such sites depends on details of the highway interchange designs, local and state actions to allow for and provide clear signage information for travelers, and local business and city actions to help educate affected businesses about the potential adequacy of available sites for relocation.

Real estate agents alone cannot necessarily match businesses to relocation sites, since they will depend on the state and city providing them with accurate and up-to-date information about how access and visibility to alternative sites will change as the I-70 project unfolds. Thus, the ultimate magnitude of business relocation will depend critically on actions that the state and city take, in cooperation with business organizations, to help educate and inform affected businesses about their options for short-term relocation or longer-term reinvestment in sites within the City of Columbia.

Table 4.8: Ratings of Business Loss Likelihood for Displaced Businesses

| Classification | Risk | Loss Factor |
|---|---|--------------|
| Requires specialized labor pool | Most likely to depend on Columbia location and thus likely to remain | 0% |
| Local customer base, not highway dependent | Most likely to relocate within the City, but some small businesses may not be able/willing to move and therefore go out of business | 10-20% (15%) |
| Regional customer base, but does not need direct hwy access. Will require highway visibility or signage | Most likely the city can retain these establishments on business loop or nearby streets | 20-45% (33%) |
| Auto services-clustering preferred (both local and regional customer base) | As Columbia is the major regional population center, it is reasonable that parcels in proximity to each other can be found for this sector. Only 2 of 7 affected businesses are regionally dependent | 20-45% (33%) |
| Furniture – clustering preferred (regional customer base) | This sector is somewhat highway dependent, and requires relatively large parcels per business, which may make site-finding for agglomeration difficult. | 60-80% (70%) |
| Primarily Freeway travelers | This sector requires easy-off freeway access and will be the most difficult to relocate. The existing hotels and fast food restaurants will face the potential for a total loss (though long term demand can be absorbed by remaining businesses). | 70-90% (80%) |

(d) Calculation of Net Business Impacts: Based on consideration of the location needs of the various categories of businesses, the availability of alternative sites meeting those needs, and experiences with business relocations elsewhere, the project team calculated ratings of the probabilities of net business loss shown in Table 4.8 above.

Applying the mean ratings shown in Table 4.8 leads to the finding that 26% of the gross job impact and 22% of the gross sales impact (representing 230 jobs and \$22 million of business sales) is likely to be lost and not relocated elsewhere within the city in the near term. (The difference in percentage of job and business sales impacts is due to the fact that the losses are concentrated in highway-serving businesses that tend to have lower business sales per worker.) The estimated total *net impact* on jobs and business sales remains within 15% of the levels cited here when alternative values of loss factor are applied, primarily because of the finding that roughly half of the displaced businesses actually serve a primarily local customer base, and hence do not need to remain located along I-70 in order to remain in business. The expected *net impacts* are displayed by type of business in Table 4.9 this table can be compared to the breakdown of *gross impacts* shown earlier in Table 4.1.

Table 4.9: Net Economic Impacts of Business Displacement and Employment Loss

| Business Sector | # of Jobs Lost | Lost Sales^A |
|----------------------------------|-----------------------|-------------------------------|
| Auto Service | 8 | \$464,000 |
| Commercial-other | 31 | \$1,828,000 |
| Construction/trades | 8 | \$1,303,000 |
| Eating establishments | 55 | \$1,885,000 |
| Health Service | 0 | 0 |
| Lodging | 50 | \$1,712,000 |
| Retail – Other | 40 | \$7,513,000 |
| Retail – Gas Service Stations | 22 | \$4,241,000 |
| Retail –Auto Dealers | 13 | \$2,544,000 |
| Misc. Services | 2 | 0 |
| Warehousing/Distribution | 1 | \$427,000 |
| Total Expected Net Impact | 230 | \$ 22,303,000 |

(A) Sales per job based on averages for the Columbia metropolitan area from the 1997 Economic Census, inflated from 1997 to 2003 based on the Consumer Price Index

Net Tax Impacts from Affected Commercial Activities

Impacts on sales-related payments to the city are shown in Table 4.10 after displaced businesses have relocated elsewhere in Columbia. These tax impacts represent the business closures, based on the analysis, as a result of the right-of-way acquisitions. These are best considered as “short-term” impacts as it remains to be seen to what extent other Columbia businesses absorb (e.g. hotels) the existing demand for services.

Commercial property tax impacts, after relocation, are more difficult to pin-point. It is perhaps safer to say that the city will make-up between 0 – 100 percent of these property tax payments. The level of business sales to be generated at a new location which will depend largely on the success offered by the new site in Columbia (e.g. traffic volumes, ease of access, ample signage). It is possible that a displaced business that finds a new location in the city does not initially maintain the same level of sales. However in the future, the remains of the parcels evacuated for the project's right-of-way may be re-packaged, eventually put back into some commercial use, and generate tax payments for the city. Table 4.10 shows the potential annual loss in tax revenue to the City of Columbia.

Table 4.10: Summary of Net Loss to City's Annual Tax Revenues in 2003 \$

| Annual Revenue Lost Project | | City of Columbia |
|-----------------------------|------------------------------|------------------|
| Lost Revenue to City | | |
| Non-Property Taxes | | \$170,370 |
| | Sales | \$97,972 |
| | Hotel Occupancy ¹ | \$67,042 |
| | PILOTs | \$ 5,356 |
| Property Taxes | | \$ 7,786 |
| | Commercial | \$ 6,465 |
| | Residential | \$ 850 |
| | Farm | \$ 471 |
| Total All Sources | | \$178,156 |

¹This is potentially a temporary short-fall at most and would depend on occupancy rates at the remaining hotels in the city, especially during peak of visitation for Columbia.

Long-Term Impact. The net impact discussed above represents the expected loss of jobs and income associated with displaced businesses that close up rather than relocating elsewhere within the City of Columbia. However, in the long run, customers tend to still spend their money on purchases of the same basic goods and services, so lost business activity due to closure of some of the displaced businesses will tend to be replaced by expansion of other existing businesses or initiation of new businesses coming in. People who formerly used a gas station that is now gone will continue to fill their cars with gas, and people who formerly ate at a restaurant that is now gone will continue to eat. The basic question is:

“If some hotels, restaurants, gas stations and retail stores in the City of Columbia are displaced and close, will the customers shift to other establishments within the city or to other establishments outside of the city?”

In this case, the City of Columbia has many factors in its favor. Columbia's position as a regional population center, home to the flagship University of Missouri Campus, the city's location along I-70 midway between St. Louis and Kansas City with lower relative commercial rents are core strengths for Columbia. Apart from wetland constraints on the western edge of the of the city limits, there is relatively little in the way of existing business centers located along I-70 immediately outside of the city limits, nor other major cities located nearby along the I-70 corridor. And the nature of the displaced businesses makes it unlikely that they could serve the same customer base (either local customers or pass-by traffic aiming to make a food/fueling stop in the population center of Columbia) from locations a significant distance away. All of these factors point to the finding that, in the long run, retail sales lost from closure of some displaced businesses is likely to be fully offset by gained retail sales at existing and new businesses within the city. Indeed, discussions with business representatives indicate that remaining hotels, gas stations and fast food establishments can absorb the business activity of displaced highway-serving businesses, though additional establishments are still likely to pop up over time as customer demand and hence profit potentials continue to grow.

It is also possible that the long-term impact of I-70 may be positive, since the increased traffic accommodated by the expanded highway and the potential for reduction in peak period traffic delays will actually increase the potential pool of pass-by traffic and could possibly reduce travel times for some regional visitors. The ability of the city to gain from that situation, however, will depend critically on two factors: (1) the extent to which the city and business community work together to develop new and attractive highway-serving and regional-serving business corridors (such as the Business Loop and other interchange areas), and (2) the city and State work together to provide traveler signage and signal sequencing to make these areas attractive and functional for travelers and regional visitors.

5

IMPLICATIONS OF I-70 CONSTRUCTION DISRUPTIONS

Introduction

The preceding chapter described the short-term implications from the right-of-way acquisitions of business occupied parcels. This chapter considers the longer-term impacts on businesses under temporary access disruptions related to a 5-10 year (possibly 20 year) project.

Overview

It is premature⁵ to know how the exact phasing (e.g. duration and sequence of work) of the corridor's widening will be staged. Yet the city wanted some expectation of the risk to area businesses due to the project's protracted work. Even with a goal of keeping two lanes of I-70 traffic moving in each direction, exits/entrances would have to be closed for some duration, along with north-south bridges spanning the interstate, and this will alter access to area businesses, some of which are dependent on pass-by traffic. This chapter discusses the mix of business activities in specific segments along the 18-mile corridor and their potential risk from construction-created access disruptions.

Approach

MoDOT's consultant did provide some general guidelines on how the multi-year project would be undertaken. Appendix, Exhibit F contains the memo from CH2MHill describing these guidelines. The general guidelines indicate that frontage roads would be worked on first, followed by bridges, ramps and lastly the mainline. One can then assume that interchanges would be improved one at a time. The implication is that there will be a direct impact on all users of a specific north-south bridge, or an interchange until work is completed in that location. However, without knowing the exact prioritization of locations along the interstate to be improved, and the duration of each project, precisely how businesses in the vicinity of the construction will endure/respond to the disruption is unknown.

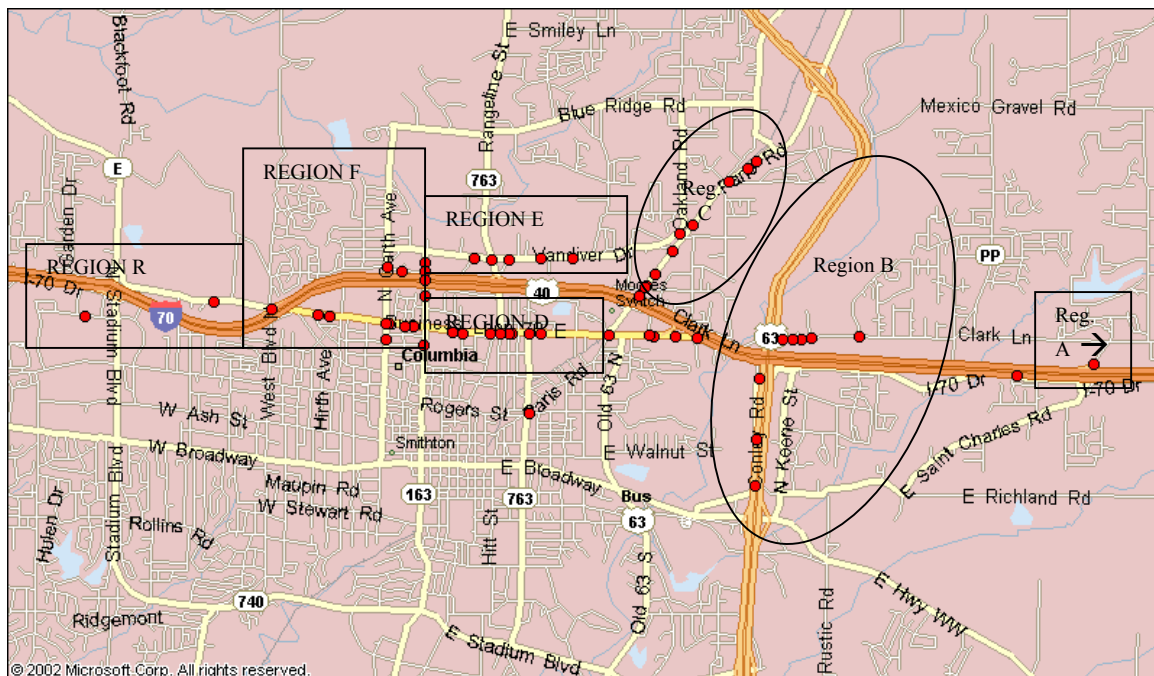
⁵ MoDOT's transportation engineering consultant, CH2MHill, was charged with developing the design and the EIS for the widening project. Only when funding becomes available would transportation engineers develop the phasing for the project.

EDR Group's approach is to first understand the mix of businesses anchored to specific corridor segments, then focusing on the predominant business activity (based on the number of establishments) for that segment identify which are traveler-serving, or access-interstate dependent businesses. Excluded from this business screening are all the businesses that will be eliminated by the right-of-way.

Segmenting the Corridor

Figure 5.1 below reveals how the corridor was segmented to facilitate the analysis. Seven segments define regions of business activity *between* key interchanges, or regions around specific north-south interstate cross-over bridges.

Figure 5.1: Business Regions Along the I-70 Corridor



The regions are defined as follows:

- **R – Stadium/Fairview Interchanges** (includes Stadium Boulevard - south to Bernadette Drive, north to Primrose Drive, I-70 Drive NW, I-70 Drive SW, Business Loop 70 West and Bernadette Drive)
- **F - Creasy Spring/West Boulevard Interchange** (includes Garth Avenue (south to the Business Loop 70 West, north to Blue Ridge Road, Texas Avenue, Business Loop 70 West between Creasy Springs Road & Providence Road, and Providence Road between Vandiver Drive and the Business Loop 70 East)
- **E - Triplet Interchanges –north** (includes Rangeline Street between Vandiver Drive and the Business Loop 70, Commerce Court, and Vandiver Dr.)

- **D** – Triplet Interchanges-south (includes Business Loop 70 East, Bowling Street, Lakeview Avenue, and Ashley Street)
- **C** – Paris Road Cross-Over (includes Paris Road between Vandiver Drive and Business Loop 70 East, Hathman Place, and Heriford Drive)
- **B** – Interchanges 128A and 131 (includes Clark Lane, I-70 Drive SE east to St. Charles Road, and Conley Road)
- **A** – Interchanges 131 and 133 (includes East Street to Charles Road, ABC Lane, and I-70 Drive SE east of St. Charles Road)

Analysis

The business activity regions with the greatest number of businesses occur around Zone **R** (Stadium/Fairview Interchanges), Zone **E** (Triplet Interchanges-North), and Zone **D** (Triplet Interchanges-South). Table 5.1 outlines the number and types of businesses by region.

Table 5.1: Business Types by Region

| Business Region | Type of Business ⁶ | | | | Total Businesses |
|---|-------------------------------|------------|------------|----------|------------------|
| | INDUSTRIAL | SERVICES | TRADE | OTHER | |
| (R) – Stadium Boulevard/Fairview Road Interchanges | 14 | 111 | 24 | 1 | 156 |
| (F) – Creasy Springs Road/West Boulevard Interchange | 2 | 54 | 16 | 0 | 72 |
| (E) – Triplet Interchanges-North | 11 | 90 | 45 | 0 | 146 |
| (D) – Triplet Interchanges-South | 14 | 43 | 52 | 0 | 108 |
| (C) – Paris Road Cross-Over | 10 | 28 | 36 | 3 | 79 |
| (A) – Interchanges 128A and 131 | 3 | 19 | 25 | 1 | 48 |
| (B) – Interchanges 131 and 133 | 10 | 9 | 10 | 1 | 30 |
| Total | 64 | 354 | 208 | 6 | 639 |

Each of the seven regions is characterized by a predominant type of business activity. Table 5.2 identifies the predominate business activity for each region and the percentage of the region total attributed to these businesses.

⁶ Categories as defined by Columbia's Metro 2025 Transportation Plan. *Trade* refers to Retail and Wholesale establishments, *Industrial* includes MFG, Construction, Public Utilities.

Table 5.2: Predominate Business Activity by Region

| Corridor Business Region | Predominant Establishment Type | % of Total Representation |
|---|--------------------------------|---------------------------|
| (R) – Stadium/Fairview Interchanges | Services | 74% |
| (F) – Creasy Springs/West Boulevard Interchange | Services | 75% |
| (E) – Triplet Interchanges-North | Services | 61% |
| (D) – Triplet Interchanges-South | Trade | 48% |
| (C) – Paris Road Cross-Over | Trade | 47% |
| (A) – Interchanges 128A and 131 | Trade | 52% |
| (B) – Interchanges 131 and 133 | Services | 30% |

It should be noted that while development of Region A (the eastern reaches of the study area) is more recent and gradual, its overall business mix is the most balanced of all the regions between industrial, trade, and services. This is likely due to ample (and large) tracts of available commercial-use land to host industrial-oriented businesses as well as offering good visibility from the interstate for travelers approaching Columbia from the east to be attractive to certain retail and traveler-serving businesses.

Within each region the focus on the businesses within the predominant type of activity to screen for their sensitivity to traveler-serving/pass-by traffic or access dependence for their day-to-day operations. While a case can be made that every business address is “access-dependent” there are specific businesses that routinely move goods out and supplies in where a prolonged disruption to their logistics management can add significantly to their cost-of-doing business in this part of Columbia. The screening of businesses in each zone also includes any of the basic traveler-serving businesses: lodgings (service), restaurants and gas stations (both retail trade). Table 5.3 below presents information on the construction-sensitive businesses within each zone.

Throughout the entire I-70 corridor, within the set of streets described above, the screening indicates there are a total of 65 businesses “at risk” from prolonged construction disruptions. This estimate is conservative as it focuses on the major business activity within a zone and the obvious traveler-serving establishments. Since industrial businesses did not comprise the majority of business in any zone, they were not screened. However, it is likely that some in this group of businesses would have a high propensity of being access-dependent. When the time comes for the project to be funded, the city would benefit by proactively interviewing key *industrial* businesses to determine whether they will have special access needs in dealing with construction disruptions.

Table 5.3: Businesses Sensitive to Access Changes During I-70 Construction

| Corridor Business Region | Identified Businesses | | | At- Risk | | |
|--|----------------------------|--------------------|--------------------|----------------------------|--------------|---------------------|
| | Select Businesses Screened | # Traveler-serving | # Access-Dependent | Total Businesses "At Risk" | # of Jobs | Annual Sales |
| (R) - Stadium Fairview Interchanges | 121 | 6 | 3 | 9 | 112 | \$7,745,000 |
| (F) - Creasy Springs/West Blvd Interchange | 56 | 6 | 4 | 10 | 162 | \$14,867,000 |
| (E) - Triplet Interchanges-North | 94 | 8 | 0 | 8 | 201 | \$13,105,000 |
| (D) - Triplet Interchanges-South | 55 | 15 | 0 | 15 | 198 | \$13,958,000 |
| (C) - Paris Road Cross-Over | 36 | 11 | 1 | 12 | 123 | \$22,229,000 |
| (A) - Interchanges 128A and 131 | 26 | 10 | 0 | 10 | 418 | \$18,428,000 |
| (B) - Interchanges 131 and 133 | 10 | 1 | 0 | 1 | 10 | \$400,000 |
| Total | 398 | 57 | 8 | 65 | 1,223 | \$90,732,000 |

The majority of the businesses “at risk” are traveler-serving such as eating establishments, gas stations, and hotels/motels and a small number are access-dependent businesses including a walk-in medical clinic, a fire station, a beverage distribution facility, an elder transportation service, and an exposition center. Annually these “at risk” businesses employ 1,223 people and account for \$90.7 million of business sales.

In several of the regions, a majority of the business sales are attributed to a single business. For example, in Zone C an access-dependent business accounts for 63 percent of the annual sales; in Zone E one traveler-serving business accounts for 66 percent of the sales in that zone; and in Zone F one access-dependent business accounts for 50 percent of the sales. Clearly apart from preserving the city’s employment base, the city should ensure unimpeded access exists during construction for several specific businesses that generate significant sales (some of which also generate tax revenues) in Columbia.

Potential Implications

The results in this analysis are intended to assist the city in understanding the make-up of the potentially vulnerable business neighborhoods defined by the I-70 interchanges and cross-over bridges. This chapter conservatively identifies the employment and sales that may be challenged at some point in the phasing of the I-70 widening and for a duration not yet known. It is unknown how any individual business might respond once the approach of the project becomes more real. Depending on the severity of the access interruption and the change in traffic flows, each business must decide whether they can remain economically viable during the construction disruption interval, or whether they will preemptively look to relocate.

It is unlikely that in any single year of the construction interval that the city would incur all of the “at-risk” sales and job disruptions. If interchange work is staggered then this analysis provides an estimate of job/sales disruption by business zone. As pass-by traffic temporarily travels along alternative routes, businesses in adjacent regions may pick-up extra business even if only for the duration of an interchange’s re-engineering.

It should be repeated again however, that there is reason to be concerned for some of the non-trade, non-services businesses in the Route B Industrial area (an northward extension of Zone (C)). These businesses help to balance the city’s economic base and if the city is to capitalize on upcoming development in this part of the metro area, strategies must be developed to keep the major N-S truck movements (U.S. 63) and E-W movements (I-70) intact.

There are a number of steps the city and the local Chamber of Commerce (and possibly MoDOT) can pursue to prepare for such a construction undertaking. These steps include:

- Good alternative Routes that work – not circuitous detours; this may also require interim steps of creating connections among the existing back street system
- Good Signage in Strategic places – communicating “open for business – alt. Route available”
- Possible use of temporary One-Way streets

A proactive campaign of these two entities can effectively make-or-break an “at-risk” set of businesses.

6 ECONOMIC DEVELOPMENT OPPORTUNITIES AND STRATEGIES ASSOCIATED WITH THE I-70 WIDENING PROJECT

Overview: Potential Economic Development Benefits from I-70

This chapter discusses implications of I-70 widening for future economic development in the City of Columbia. While a prior document discussed the expected losses associated with land takings (and the elimination of businesses on those parcels), this document focuses on potential gains associated with attracting new and expanded business activity in the city after completion of I-70 widening. It also discusses the strategy planning that is necessary to enable those opportunities to become realities.

The widening of I-70 and rebuilding of interchanges and frontage roads can potentially benefit the Columbia economy in the long term. This can potentially occur through three mechanisms:

- Providing opportunities to economically “**rationalize**” redevelopment of existing underused parcels near the highway (i.e., reconfigure buildings and uses to generate greater levels of jobs and business sales), and increase access to those parcels;
- Reducing congestion and improving travel times on the highway, thus making the city a more desirable central Missouri location for people to visit and for industries to locate;
- Increasing the roadway capacity of I-70 to and from Columbia, to support the anticipated growth in traffic volumes through Columbia, thereby sustaining and increasing the potential for economic activities that serve pass-through travelers.

In reality, these benefits are dependent on careful design of interchanges, investment in improving connecting roads, improved traveler and visitor signage, efforts to enhance the quality of visitor experiences and corresponding strategies to attract and grow business activity. Thus, there are both opportunities and pitfalls, and the degree of potential

impacts varies systematically among different parts of the city and various elements of its economy. The remainder of this document clarifies the nature of these potential impacts, the appropriate perspective for using this information, and the types of strategies needed to make them occur.

Relationship of Economic Development Impacts and Planning Forecasts

As part of the travel demand forecasting completed for the I-70 EIS, year 2030 forecasts for changes in population and employment were developed by the Columbia Area Transportation Study Organization (CATSO) and MoDOT for the Columbia metropolitan area. In conjunction with the forecasts, the associated acreage of land that would likely be developed to accommodate those needs was estimated and the forecast growth was distributed based on available vacant land, roadway access, and development constraints.

It is important to understand the value of the 2030 forecasts for planning and their limitations for economic development. It is standard practice to develop 25-30 year urban growth forecasts as a tool to help ensure that the city develops adequate zoning and growth/development policies, as well as adequate levels of investment in road and sewer/water infrastructure to meet future growth needs.

The consequences of inadequate planning and inadequate infrastructure are severe – they can lead to inefficient and haphazard land use patterns, clogged roads, sewer overload, and even bans on new development that halt local economic growth. As a result, there are strong reasons why local planners need to allow for the potentially possible rates of future population and employment growth. In reality, though, a variety of factors – from international energy prices to national economic policy to local highway reconstruction – can and often do cause actual economic growth to lag behind the more optimistic forecasts of local planners. From a planning perspective, though, that is not necessarily a major shortcoming, since a lower growth rate may only mean that it takes additional time to reach forecast levels of local growth. That does not necessarily change long-run land use and infrastructure planning needs.

From the viewpoint of economic development, however, a totally different perspective is adopted. Economic developers assume that economic growth does not usually occur automatically, but depends critically on proactive strategies including:

1. Assistance in assembly and development of office/ industrial parks and buildings;
2. Road and water/sewer infrastructure to serve new and expanded development sites;
3. Targeted marketing to attract new businesses; and

4. Targeted support services to facilitate new startups and expansion of existing businesses.

To economic developers, no forecast of growth can ever be achieved without the preceding strategy steps occurring. From that perspective, the failure to execute a sufficient economic development and infrastructure strategy can be expected to result in lower population and employment levels in year 2030, while a highly successful and aggressive economic development and infrastructure strategy could lead to even higher population and employment levels by that year.

It is also important to note that the formulation of zonal planning forecasts are themselves based on a process of allocation – first identifying potential metro/regional growth targets and then allocating that growth among zones within the city. The allocations are based on factors such as total acreage, availability of vacant land and proximity to arterial roads. Neither the metro forecasts nor the zonal allocations considered (nor could they be expected to consider) other factors such as changing manufacturing and distribution/warehousing technologies, changing competition among retail chains, or major changes in highway interchanges and access patterns. This is consistent with standard planning practice, which is to assume a constant baseline forecast for economic and traffic growth that can be used for any transportation scenario. That can be desirable to give planners a consistent basis for evaluating the adequacy of alternative infrastructure improvement scenarios. For this analysis, the forecast of future employment growth was not modified under any of the alternative I-70 scenarios to ensure consistency with the forecasts and assumptions contained in the I-70 EIS.

The purpose of the economic impact study, on the other hand, was precisely to identify how alternative I-70 scenarios can lead directly to net job loss in some zones as a result of land takings, while also creating potential job gains in some zones as a result of traffic flow and access changes. The bottom line is that:

- The *baseline planning forecasts*, by ignoring the potential impacts of I-70 in their calculation process, are implicitly assuming a scenario whereby future accessibility and traffic congestion levels throughout the city will be neither substantially better nor substantially worse than current conditions.
- The *economic impact analysis*, by analyzing the potential impacts of I-70 in its calculation process, is explicitly testing alternative scenarios whereby future accessibility and traffic congestion levels in some parts of the city may be substantially better or worse than current conditions.

In effect, the economic impacts may be viewed as representing increases and decreases that “pivot” off of the baseline economic growth forecasts.

Impacts of I-70 by Geographic Area of the City

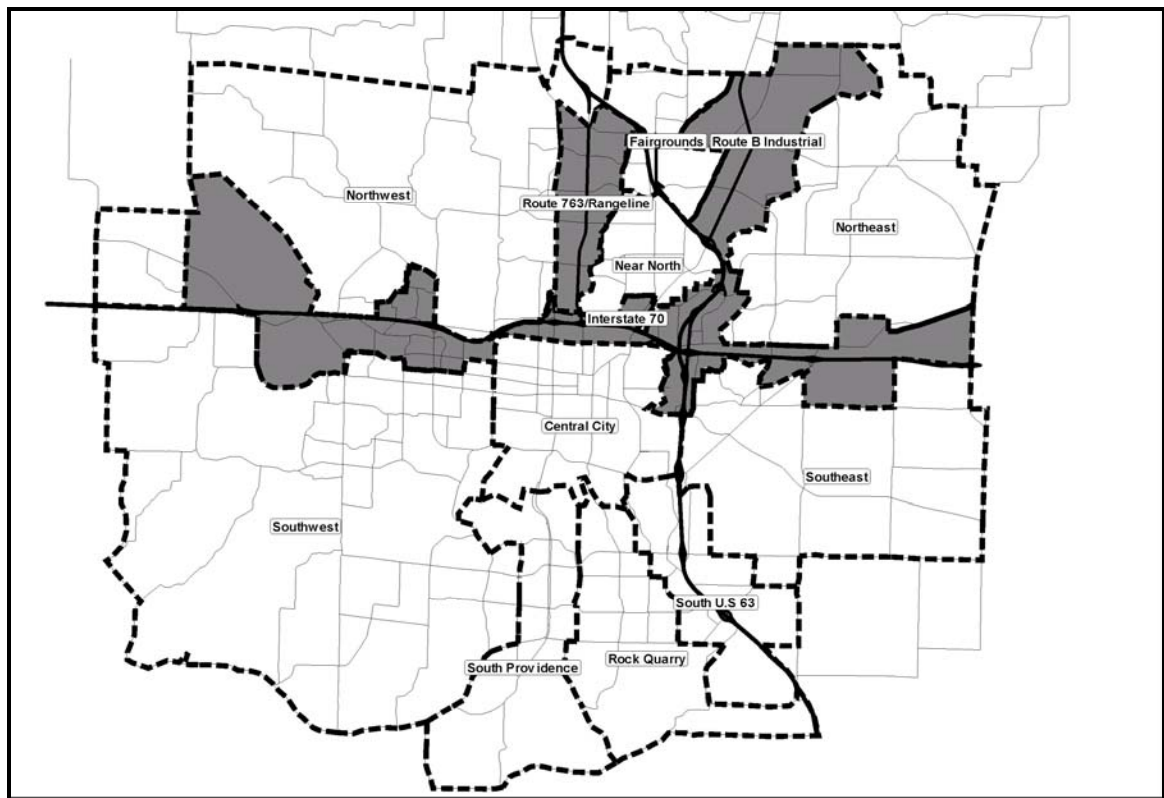
Transportation planners have adopted a highly detailed zonal system of Transportation Analysis Zones (TAZs), which aggregate into larger planning districts. (See map on next page.) Commercial and industrial development is concentrated in five of those planning districts. The baseline projections and the relative impact of I-70 for each of those areas are discussed in the bullet items below. Associated forecasts of employment change are shown in Table 6.1 which follows. Further details of the potential opportunities associated with I-70, and their strategy and investment requirements, are then discussed later in this document.

- Interstate 70 Corridor – The area is forecast to have the greatest level of retail and service employment growth in the city. Significant land takings required for I-70 expansion, though, will lead to some short-run reduction in business activity once the I-70 project is started. While remaining vacant land is limited, there are substantial opportunities for long-term commercial growth as existing low-density parcels are redeveloped into higher density commercial uses catering to a broader regional market. Much of this opportunity will depend on details of highway interchange designs, assembly of parcels by developers, and development of more local road connections. There will also be opportunity for additional development of retail and office activities along US-63, North of I-70 and below Mexico Gravel Road.
- Route 763/Rangeline – This area, north of the central part of the I-70 corridor, is forecast to have growth concentrated in the retail sector, but trailing the I-70 Corridor and South US-63 areas in total amount of retail growth. I-70 could provide opportunity for even greater growth of smaller scale retail and consumer services in this area, but that depends on design of the planned new triplet interchanges and whether there is upgrading of local road connections from the I-70 interchanges to Rt.763/Rangeline and Vandiver roads.
- Route B Industrial – This area is forecast to have the greatest level of industrial employment growth in the city. The southern portion of this land use sub-area is located north of the I-70 – US-63 interchange at Mexico Gravel Road. The growth of traffic through I-70 and improved traffic flow along I-70, along with better accessibility afforded by the improved I-70 interchange with US-63, can be expected to make this area even more attractive as a location for trucking and warehousing, as well as some manufacturing.
- South US-63 – This area is forecast to have the greatest level of office employment growth in the city and the second greatest level of retail growth. Much of the area's projected growth is in retail, a likely consequence of growing residential neighborhoods. The area's projected office growth is associated with land availability as well as its good highway access along the route to Jefferson City. Modest industrial growth can also be attributed to these last two factors as well. The I-70 project is not expected to have a major impact on development in this area, since

it will not significantly affect access to this area, and increases in regional traffic flow tend to have less impact on office locations than on retail locations.

- Central City** – This area is forecast to have the second greatest level of office employment growth in the city (after the South US-63 area) but relatively little retail and service growth. However, it is possible that improvements in access and signage for I-70 interchanges, Business Loop East and connecting roads could also serve to preserve access and possibly even encourage more visits to downtown – particularly if associated with efforts to develop and promote more visitor-oriented activities. In any case, the south side of Business Loop 70 East appears on maps as officially within the Central City area. If so, then some of the retail growth impact on that road (discussed in the context of the I-70 corridor area) will actually be classified as within this area.

Figure 6.1: Columbia Metro Land Use Subareas



The highlighted areas in Figure 6.1 identify subareas that will be forecast to have employment growth that will be affected by the improvements to I-70 and its interchanges.

Table 6.1: Employment Growth and I-70 Impacts (2005- 2030)

| | I-70 Corridor | Route 763 / Rangeline | Route B Industrial | South US-63 | Central City |
|---|--------------------------|----------------------------------|-------------------------------|------------------------|-------------------------|
| <u>Forecast Emp. Growth (2000-2030)</u> | | | | | |
| Retail | + 2453 | + 1311 | + 437 | + 1399 | + 175 |
| Service | + 1997 | + 666 | + 416 | + 998 | + 166 |
| Industrial | + 316 | + 56 | + 486 | + 372 | + 0 |
| Office | + 1058 | + 85 | + 741 | + 904 | + 2269 |
| Developable Vacant Acreage w/sewer by 2030¹ | | | | | |
| | 3588 | 867 | 1653 | 1446 | 265 |
| <u>Short-Term Employment Loss from I-70 Land Takings</u> | | | | | |
| Gross Change* | - 873 | 0 | 0 | 0 | 0 |
| Net Change* | - 232 | 0 | 0 | 0 | 0 |
| <u>Long-term Growth from I-70 Traffic/Access Changes</u> | | | | | |
| Potential Opportunity | +700 | + 225 | + 325 | 0 | 80 |

¹Totals reflect all zoning types, not just commercial.

*Gross Loss is the total direct number of jobs associated with businesses whose land and buildings will be taken for the expanded I-70 highway; Net Loss is the expected actual loss after adjusting for the fact that some businesses (particularly small scale, local-serving businesses that do not require highway visibility and direct highway access) can be expected to relocate to other available parcels in the city, if not in their local area. See separate document on land taking impact.

Impacts of I-70 by Economic Sector

When examined in light of Columbia's economy, the opportunities generated by the I-70 project could increase the city's market of several important industries, which are discussed below. References are made to specific TAZs in the discussion of a sector's potential growth opportunity resulting from the completed interstate project. Maps are contained in the Appendix (Exhibit G) depicting the specific location of these business location opportunities.

Overview of Columbia's Economy

From 1998-2001, employment in Columbia grew by nearly 8%.⁷ (See Table 6.2.) The sectors that are of concern for this analysis are manufacturing, wholesale trade, transportation/ warehousing, retail trade and accommodation/ food service. These sectors are particularly dependent on highway access and traffic levels.

Table 6.2: Recent Columbia Area Economic Trends

| Industry Code Description | Employees 1998 | Employees 2001 | Change 1998-2001 |
|---|-------------------|-------------------|------------------|
| Construction | 3,211 | 2,880 | -10.3% |
| Manufacturing | 5,700 | 5,847 | 2.6% |
| Wholesale trade | 1,889 | 2,053 | 8.7% |
| Retail trade | 8,956 | 8,984 | 0.3% |
| Transportation & warehousing | 1,012 | 1,120 | 10.7% |
| Information | 1,354 | 1,351 | -0.2% |
| Finance & insurance | 4,822 | 5,286 | 9.6% |
| Real estate & rental & leasing | 46 | 1,037 | 22.6% |
| Professional, scientific & technical services | 1,960 | 2,432 | 24.1% |
| Management of companies & enterprises | 621 | 933 | 50.2% |
| Administration, support, waste management, remediation services | 3,301 | 5,738 | 73.8% |
| Educational services | 1,677 | 1,779 | 6.1% |
| Health care and social assistance | 13,754 | 13,699 | -0.4% |
| Arts, entertainment & recreation | 463 | 614 | 32.6% |
| Accommodation & food services | 6,137 | 6,619 | 7.9% |
| Other services (except public administration) | 2,391 | 2,441 | 2.1% |
| Other and Unclassified | 551 | 394 | -28.5% |
| Total | 58,592 | 63,207 | 7.9% |

Source: United States County Business Patterns

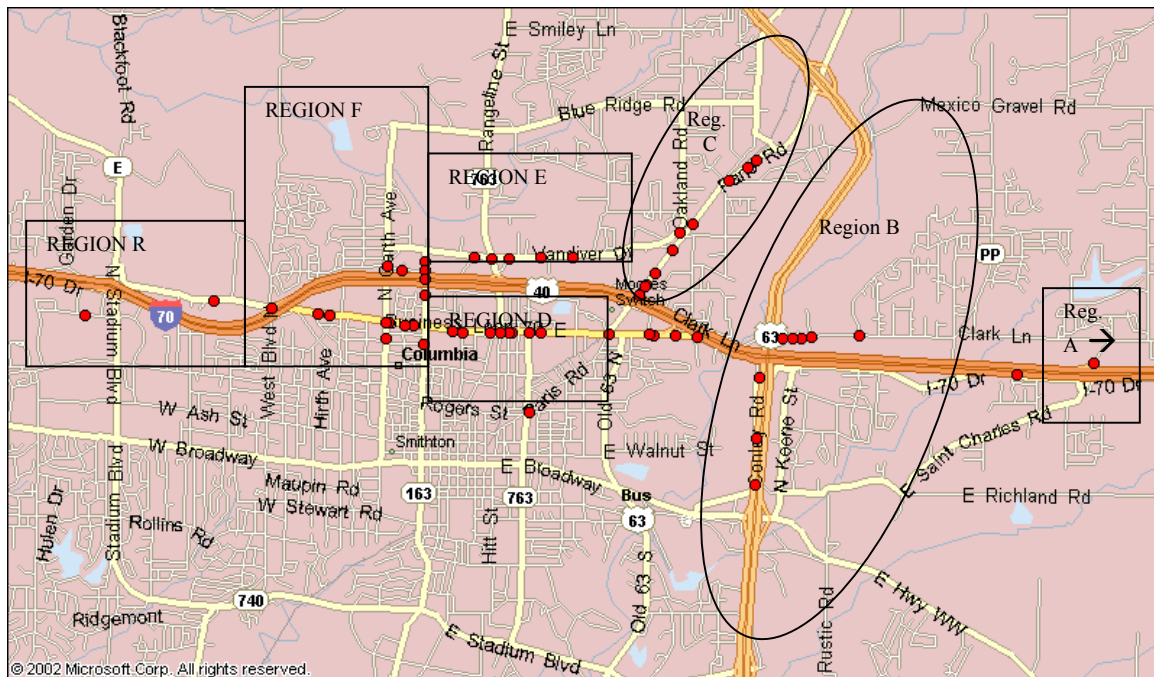
Other sectors, some of which have shown robust gains since 1998, are not significantly highway dependent when contrasted with the sectors listed above. The presence of the University of Missouri, the population concentration within Columbia and the city's proximity to Jefferson City are important factors for many businesses in these sectors in making location and expansion decisions.

Below is a discussion on how specific highway-dependent sectors will be likely affected by traffic and access changes from the I-70 project, along with their location

⁷ Source is County Business Patterns for Boone County. An examination of Dun and Bradstreet data for Boone County and the City of Columbia shows that the city accounts for roughly 90% of the county's economy.

requirements and the availability of developable land (both vacant and underutilized) for those commercial uses.

Figure 6.2: Business Regions Along the I-70 Corridor



Trucking, Warehousing and Wholesale Trade. Overall, these industries grew at a slightly slower rate than the economy as a whole, 6% against 7.9% growth in the overall economy. The Truck Transportation industry actually lost jobs – and its performance was about 15% below the local economy, Wholesaling activities grew nearly 9% and the smalls sector of support services for transportation grew by about half of that rate. In the long term, however, the combination of improvements to I-70 with land available north of I-70 off of Route 63 (particularly the Route B industrial corridor) will provide an attractive location for companies that provide truck transportation, regional wholesaling services and additional support services. With the potential to attract an additional 325 *industrial* jobs to the Route B land use sub-area, as a result of highway interchange access improvements and increased trucking activity through the region, a good number of these job gains can be envisioned in transport/warehousing activities. Based on availability of land for industrial development and access considerations, the most likely location for these businesses would be in Region (B) and further north (recognizing that current land uses in many parcels northward are not commercial). It is unlikely that industrial service businesses of this nature will locate near Route 63 south of I-70 because the southern location is too close to more densely populated areas.

Manufacturing. Employment in Columbia's manufacturing sector grew by nearly 3% between 1998 and 2001 in the face of a 6% decline nationally and a 12% drop in Missouri, (see Table 6.3). Strong performing sectors included food processing (+45%),

and machinery (+68%). A very small furniture sector doubled in size. As in the industrial services sectors discussed above, it is anticipated that the area north of I-70, near Route 63 would be a prime location should manufacturing continue to grow in Columbia.

Table 6.3: Manufacturing Employment in Boone County Outpaced Missouri and the Nation

| | 1998 | 2001 | Change 1998-2001 |
|--------------|------------|------------|------------------|
| National | 16,945,834 | 15,950,424 | -5.9% |
| Missouri | 380,003 | 335,403 | -11.7% |
| Boone County | 5,700 | 5,847 | 2.6% |

Source: U.S. County Business Patterns.

Note: 2004 Dun and Bradstreet data indicate that 78% of Boone County's manufacturing employment is in Columbia

Auto dealers and furniture stores. Although the overall retail sector showed no growth between 1998-2001, more specific types of retailing has continued to grow locally. In particular, Motor Vehicle Dealers and Parts Dealers grew by nearly 5% overall and employment in furniture stores increased by more than 12%. Both of these industries (a) serve broader regional rather than just local customer bases, (b) benefit from improved highway access and visibility, and (c) also benefit from agglomeration -- i.e., each auto dealer benefits if auto dealers are located near each other to attract serious shoppers and buyers from the central Missouri region. The same dynamic is true for furniture stores. These agglomerations lead to strong marketing campaigns and a locational identity for cars and/or furniture, attracting still more companies. The furniture and auto industries do not require immediate off-highway access, but they do gain by locations visible and easily accessible from a major highway.

The widening of Interstate 70 provides Columbia with a long-term opportunity to upgrade and economically "rationalize" development (i.e., reconfigure buildings and uses for higher density uses that generate more jobs and business sales) along Business Loop 70 East and Business Loop 70 West. For instance, with improved highway access after widening of I-70, these locations could be appropriate for an "auto-mile" (concentration of auto dealers) and a concentration of two or more regional furniture dealers. Concentrations of auto dealers can also attract parts stores and other related services, and furniture stores attract home furnishings, possibly also supporting the city's small furniture industry, as well as supporting furniture finishing and repair services and provide more clients for local trucking services. However, developing these types of agglomerations required assembling underutilized parcels along these business roads and encouraging relocation of auto dealerships and furniture stores, several of which face dislocation from their current establishments due to anticipated land takings associated with the I-70 project. Based on past experience, EDR projects that reassembled parcels along the business loops could add roughly 300 more jobs than otherwise projected.

Restaurant and other retail. In addition to auto dealers and furniture stores, some restaurants and clothing stores in Columbia also serve a regional customer base. Restaurants, along with service stations, also benefit from growing pass-by traffic on I-70. Employment in restaurants and drinking establishments grew by nearly 10% from 1998-2001, and clothing stores showed an increase of almost 11%. Service station employment grew by about 7%. Demand for restaurant food and gasoline should continue to increase as through traffic grows on I-70. Moreover, improved (faster) access from a regional population base should eventually expand the regional customer bases for Columbia's restaurants and retail sectors (not limited to clothing stores).

Additional retail stores can thrive to the extent that there are additional parcels that are made to be easily accessible to/from I-70 interchanges. While increased highway traffic flow and improved speeds along I-70, there can be opportunities for expanding retailing as discussed above although much of this opportunity is contingent on interchange access improvements and development of a better system of connections to intersecting roads and side streets. (This includes the triplet interchanges, as well as interchanges west of Stadium and east of US-63.) In particular, the proposed "triplet" interchanges will provide highway access for these types of retail services north of I-70. When looking at proposed plans for highway expansion and available vacant land and underutilized land circumventing Vandiver Drive in Regions (E) and (C). This type of land use can flourish with good signage and a street patterns for easy on/off access. That requires that the city or local developers provide for a local street network that supports parcel access from the potential infill. With such improvements, it is possible for there to be another 480 jobs located along the I-70 corridor area (and adjoining northern edge of the Central City area) and up to 225 more located in the Rangeline/Vandiver area (by year 2030).

Hotel. New hotel development has continued to occur over recent years in Columbia, although employment data show a flat-line (no growth) trend between 1998 and 2001. This is indicative of a saturated market (i.e., more supply than is needed to serve existing demand). Currently, there are four lodging establishments with 62 full-time equivalent jobs that will be displaced by projected I-70 land takings. However, interview findings indicate that remaining hotels normally have sufficient unused capacity to serve the demand that is currently served by those hotels.

It is likely, however, that increased traffic growth along I-70 after completion of the widening and rebuilding project will increase demand for hotel rooms (by year 2030). The easy-on, easy-off freeway access generally needed by Columbia's hotels poses difficult relocation challenges. The parcels best suited for hotel development in the long term might be on the east end of town, within Region (A). Additional parcels near the intersection of I-70 and Route 63 (Region (B)) might attract hotel development in the long term after proposed interchange improvements and well as the I-70 project is completed. This location is not as desirable as the east-end TAZs, because two major projects are slated for construction, which means that the land area is more influx than elsewhere along I-70, and the location is proximate to the city's primary industrial area. The I-70/Route 63 sites, however, are more central to the city than the eastern parcels (though drive time differential is several minutes).

Economic Development Strategy and Local Investment Needs

The short-term impact of the I-70 project will involve takings of some existing businesses, followed by a period of reduced access for remaining businesses along the corridor while reconstruction of interchanges (and their local road connections) take place. To minimize the business loss from construction activities, it will be important for the city and State to collaborate in development of highly visible signs. This strategy should include:

- (a) advanced signage for motorists approaching Columbia, advising them of the continued access to all businesses and attractions in Columbia -- with some route access changes;
- (b) at each interchange, signage for travelers on I-70 indicating the availability of lodging, restaurant, retail and other services (as appropriate) at those interchanges, with assurance that motorists can safely get off of the interstate highway and easily get back on I-70;
- (c) roadway connections to make sure that the assurance of on/off access is true;
- (d) local street signs indicating to local residents how they can still access various business streets and shopping areas;
- (e) local promotion of business districts whose access is temporarily reduced by the construction process, indicating that they are still open for business. This can be done via articles and maps in the newspaper, via flyers distributed at local venues, and via direct advertising. This is similar to efforts of the Mass Highway Dept. in offering traveler information and business promotion assistance as part of the I-93 project through central Boston.
- (f) External promotion of Columbia to its own businesses and to outside business interests, indicating that the project is part of a major investment in the city's future growth, and that now is a good time for businesses to come into Columbia.

The long-term impact of the I-70 project will involve growth of pass-by traffic and reduction in congestion delays that would otherwise get worse over time. The growing pass-by traffic should be recognized and promoted as a potential market to be tapped. The future possibility of improved highway speeds for access into and out of Columbia should also be recognized and promoted as a feature making Columbia even more attractive as a location for some businesses. This particularly includes (1) businesses that require incoming or outgoing trucking deliveries (including manufacturing, wholesaling, warehousing and trucking), (2) office activities that require broad worker access and (3) retail activities that require broad shopper access.

To maximize the business gain from a completed I-70 project, it will be important for local business and city leaders to collaborate in development of improved sites for industrial park sites, commercial office sites and commercial retail sites. That means collaboration and/or cooperation as appropriate to:

- (a) allow and encourage assembly of sites for larger scale and denser development of these industrial, office and retail activities;

- (b) provide enhanced local road access to businesses off of interchanges and cross streets;
- (c) provide attractive landscaping to enhance the quality of life appearance of Columbia and its business districts, to provide an amenity to local residents and to enhance business attraction efforts;
- (d) advertise the availability of Columbia's many industrial parks, office parks and specialty retail districts and their regional accessibility features (along with other features) in venues and media that reach growing and relocating businesses.

Since most of the new sites to be developed will lack direct visibility from I-70 (due to the difference in elevation and longer distance from ramps to cross streets), there will also be a continued need for the city and State to collaborate in development of highly visible signs along I-70, along with attractive landscaping and sight lines for the exit ramps and cross-street intersections. Once the project is complete, the signs for upcoming interchanges should indicate to travelers that they can exit at those interchanges to access traveler services, as well as commercial and industrial districts there. That will serve as an important source of assistance to reduce motorist confusion (a safety feature) and as a byproduct it will also help to promote the economic assets of Columbia.

CONCLUSIONS

This study has identified various implications of MoDOT's proposed I-70 widening on the City of Columbia. These implications pertain first to design choices for the 18-mile corridor. Key among these are (a) how interchanges are augmented, (b) where ramps are situated, (c) how long before a location a traveler must exit, and (d) how they will travel on frontage roads. Second is the immediate economic and tax revenue impacts associated with the project's probable foot-print – namely land-takings that displace businesses and the likelihood that a business can successfully relocate elsewhere in the City and thrive. Third is consideration of businesses that are not displaced but are abutting the construction path. Without knowing the details of the project's multi-year phasing, there is reason to be concerned that many of these businesses will experience access-disruptions that potentially reduce the amount of business they receive from pass-by traffic, regular customers, or raise a business' logistics costs. Last is consideration of how the City and its economic developers can leverage the benefits of the completed widening project into new business growth.

The City's design-related concerns focus on preserving maximum taxable property, ensuring that its visitors exiting the interstate find access to corridor businesses unencumbered by circuitous and lengthy routes, and that local emergency vehicles do not experience impaired access as they respond to calls. This is especially important as the City's current access-street system is fairly undeveloped in specific parts of the corridor.

Diminishing sightlines from Interstate 70 to abutting businesses will require well-placed signage in advance of exit ramps to assist travelers. Where access roads are to be constructed, one-way frontage roads with limited driveway access can minimize the I-70 ROW foot-print (and cost), and provide comparable performance to a collector-distributor system. Certain interchange modifications will affect traffic flows around parcels in the vicinity of the interchange. Columbia economic developers will need to be sensitive to matching the proper business prospect to transportation traits of available parcels. Specifically there are likely to be parcels that will have reduced pass-by traffic and would therefore not be attractive to retail and specific service type businesses. Finally the introduction of two ramps at Fairview Road to alleviate pressures on the modifications for Stadium Boulevard will be paired with a new I-70 interchange for Scott Boulevard to complete the commercial traffic flows unmet (and not achievable) at Fairview Road location.

The ability to relocate specific businesses displaced by the project's intended foot-print, to elsewhere in the city greatly reduces the initial negative impacts of business closures, by seventy-five percent. The net impact annually is 230 jobs lost with \$22.3 million fewer sales. These impacts occur with abutting restaurants, hotels/motels, and assorted

retail shops. It is unlikely the lodging sector will experience a decline in sales given that the city's occupancy rate leaves room for remaining city hotels/motels to absorb the demand of I-70 travelers.

It is estimated that the city will forfeit \$170,000 annually in business payments (comprised of sales, occupancy taxes, & PILOTs) as a result of this decline in activity.

Annual property tax losses for the City are reflective of those parcels within the foot-print that do not get replaced elsewhere in the City – commercial or residential. All but 10 percent of the eliminated residential parcels are expected to be made up for by the existing housing stock and developments underway. Mobile home parks tied to the foot-print are less certain to relocate in the City. The City's portion of property tax revenue shortfall is \$7,786, with 85 percent of the shortfall from commercial properties.

The yet to be defined project phasing for the multi-year undertaking will create access-disruptions as the project moves along the corridor. At minimum 65 businesses proximal to the interstate, and near the construction path are "at-risk" because they are either traveler-serving or access dependent. Over the life of the project an estimated 1,223 jobs tied to combined sales of \$91 million could be forfeited if the construction phases are not proactively managed to minimize access disruptions. Such steps would include (a) good alternative routes that work – not circuitous detours; this may also require interim steps of creating connections among the existing back street system; (b) good signage in strategic places – communicating "*open for business – alt. Route available*"; and (c) possible use of *temporary* one-way streets.

The completed I-70 project will provide four additional interstate lanes, safer conditions on exit and entrance ramps, reduced travel times, improved LOS for Stadium Boulevard, more direct connections (I-70 –US-63) at specific intersections, and a complete frontage road system for local access. Without knowing how the remnants of parcels absorbed by the foot-print might be re-packaged and marketed, the potential for the improved I-70 project to change future business growth expectations exists. This potential is shaped for the specific land-use sub-areas adjacent to I-70, in the context of projections for job growth and developable commercial land (taken from the CATSO 2025 Transportation Plan), the net losses incurred by the project foot-print, and the composition of businesses that make up that neighborhood. The City has the opportunity to leverage an added 1,330 jobs across the corridor after the project is complete. There is vacant developable property located in the I-70, Route 763/Rangeline, and Route B Industrial corridors which are poised to absorb most of the I-70 project's business attraction benefits.

These benefits are not guaranteed however. The city, property owners, and developers must coordinate a strategy that accomplishes several key changes:

- (a) Allow and encourage assembly of sites for larger scale and denser development of these industrial, office and retail activities;
- (b) Provide enhanced local road access to businesses off of interchanges and cross streets to circulate traffic;

- (c) Provide attractive landscaping to enhance the quality of life appearance of Columbia and its business districts, to provide an amenity to local residents and to enhance business attraction efforts; and
- (d) Advertise the availability of Columbia's many industrial parks, office parks and specialty retail districts and their regional accessibility features (along with other features) in venues and media that reach growing and relocating businesses.

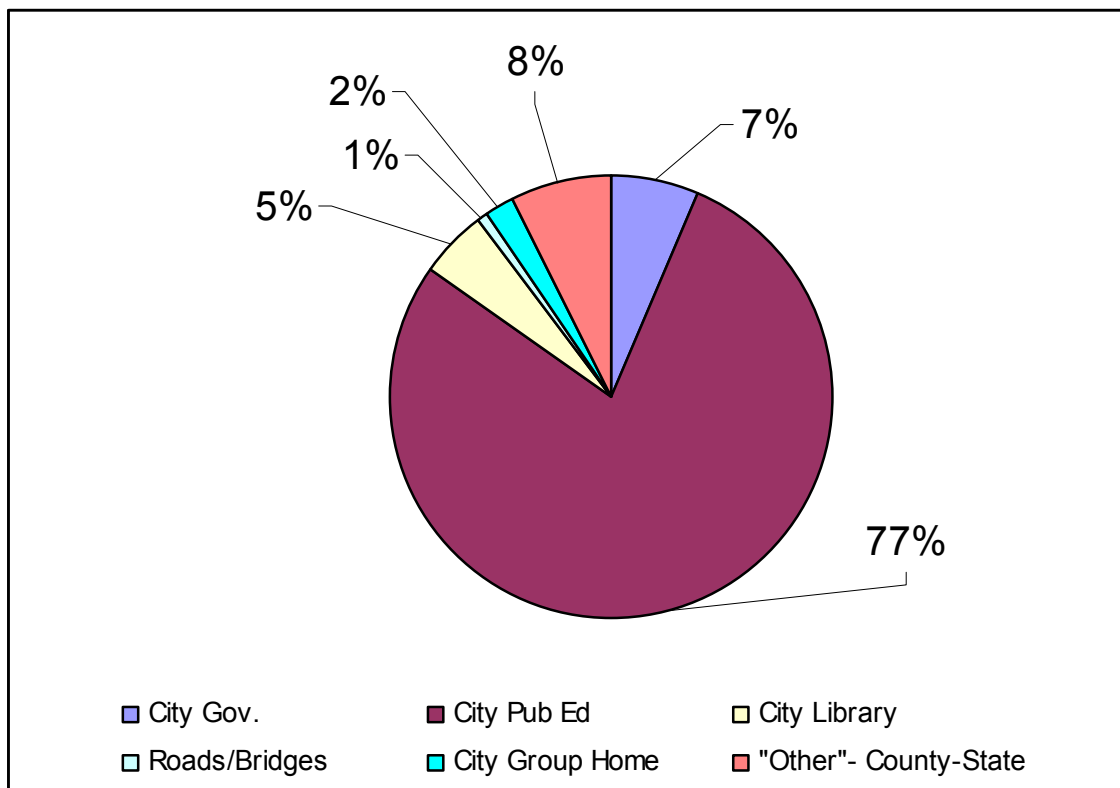
A coordinated development strategy for the I-70 corridor will allow the City of Columbia to make the most out of the project's changes and foster a conducive business environment for prospective businesses to locate and for existing businesses to thrive.

APPENDIX

Exhibit A – Division of Property Tax Dollars by Taxing Entities

The allocation of property taxes per \$100 of assessed value is as follows: city government receives \$0.41, Columbia School District receives \$4.94, Library districts (Columbia and Boone County) collect \$0.63, Road/Bridge fund receives \$0.05 and State/County/Group Home receives \$0.28 per \$100 of assessed value.

The majority of these dollars affect city-based activities as portrayed below.



Appendix

Exhibit B – Results of CH2MHill Traffic Modeling for the Triplets

| Providence north intersection | | | | Providence south intersections | | | |
|--------------------------------------|------------------------------------|-------------------------------------|-----------------------|---------------------------------------|------------------------------------|-------------------------------------|-----------------------|
| 2030 | | | | 2030 | | | |
| Design Format | Volume (peak cars per hour) | max v/c (volume to capacity) | LOS (or speed) | Design Format | Volume (peak cars per hour) | max v/c (volume to capacity) | LOS (or speed) |
| 1. Two-way | NA | NA | NA | 1. Two-way | NA | NA | NA |
| 2. One-way with no access points | 4470 | 0.73 | B | 2. One-way with no access points | 4670 | 0.86 | B |
| 3. Collector - Distributor | 4460 | 0.73 | B | 3. Collector - Distributor | 4660 | 0.86 | B |
| Rangeline north intersection | | | | Rangeline south intersection | | | |
| 2030 | | | | 2030 | | | |
| Design Format | Volume (peak cars per hour) | max v/c (volume to capacity) | LOS (or speed) | Design Format | Volume (peak cars per hour) | max v/c (volume to capacity) | LOS (or speed) |
| 1. Two-way | NA | NA | NA | 1. Two-way | NA | NA | NA |
| 2. One-way with no access points | 5200 | 0.93 | C | 2. One-way with no access points | 5490 | 0.99 | C |
| 3. Collector – Distributor | 2610 | 0.78 | C | 3. Collector - Distributor | NA | NA | NA |
| BL70 East north intersection | | | | BL70 East south intersection | | | |
| 2030 | | | | 2030 | | | |
| Design Format | Volume (peak cars per hour) | max v/c (volume to capacity) | LOS (or speed) | Design Format | Volume (peak cars per hour) | max v/c (volume to capacity) | LOS (or speed) |
| 1. Two-way | NA | NA | NA | 1. Two-way | NA | NA | NA |
| 2. One-way with no access points | 2665 | 0.78 | B | 2. One-way with no access points | 3185 | 0.72 | B |
| 3. Collector – Distributor | 2655 | 0.78 | B | 3. Collector - Distributor | 3175 | 0.72 | B |

CH2MHill Notes on Table Results:

“Note: if the volumes are different between design formats, please explain the reason why.”

The volumes at Providence and BL70 East are slightly (10 vehicles) higher for the One-way System in order to account for vehicles that may mistakenly exit early for their desired cross street.

The volumes at Rangeline are different for two reasons. First, under the C-D system east/west through volume is pulled out of the intersection via flyover ramp. Second,

because the C-D system utilizes a SPUI, the right turns are pulled out of the intersection.

Other Notes:

The capacity of the intersections at Providence, Rangeline, and BL70 East (not the roadway segments) will control when the system breaks.

The one-way system as analyzed does not contain any access points since the amount/type of development has not yet been determined.

The volumes represent the total number of vehicles that use the intersection during the PM (controlling) peak hour.

The max v/c numbers represent the ratio of volume to capacity for the controlling movement for the intersection.

For the collector-distributor system the intersection at Rangeline is a Single Point Urban Interchange and therefore contains only one intersection (numbers in the Rangeline north chart).

CH2MHill's Memo Accompanying Traffic Data Analysis, April 16, 2004

1. Because the capacity of the system is controlled by the capacity of the intersections and not the roadway segments, the volumes/capacities/LOSs are given for the intersections that compose the triplet system.
2. The volumes on the chart represent the sum of all movements at the intersection in the PM (controlling) peak hour.
3. The Two-way System was determined to be unreasonable and therefore eliminated.
4. The capacity column in your chart has been modified to max v/c. This represents the ratio of volume to capacity *for the controlling movement of the intersection*. Please be aware that it is possible to have a max v/c value greater than one and still meet the threshold. The threshold is LOS D for the overall intersection and is controlled by the overall intersection delay. There really is no overall max volume capacity at the intersections because it will vary depending on the breakdown of the different movements; ie if a large percentage of the intersection volume is in movements that conflict with each other, the intersection delay will exceed the threshold sooner than if a smaller percentage of the intersection volume is in movements that conflict with each other.
5. The C-D system utilizes a Single Point Urban Interchange (SPUI) at Rangeline and therefore has only one set of intersection data instead of two. The data is contained in the Rangeline north intersection chart.
6. The One-way system has been analyzed for the "base condition", meaning it does not contain any additional volume due to frontage road access points since the amount/type have not yet been determined.
7. You will notice differences in volumes between the two systems. The reasons why are as follows: The volumes at Providence and BL70 East are slightly (10 vehicles)

higher for the One-way system in order to account for vehicles that may mistakenly exit early for their desired cross street. The volumes at Rangeline are different for two reasons. First, under the C-D system the east/west through movement is pulled out of the intersection via flyover ramp. Second, because the C-D system utilizes a SPUI, the right turns are pulled out of the intersection.

Regarding additional capacity available for either system, in your previous email you alluded to the additional 15% capacity that could be absorbed by the one-way system before it "bogged down". We want to be very clear about what that additional 15% will do. Any more than an additional 15% is what will cause the system *to operate worse than the established threshold of operational acceptability (LOS D)* at the controlling intersection in the system, i.e. the system is only as effective as the worst intersection in the system. Also, it is important to clarify that the additional 15% is added to the base condition for the one-way system as described in note # 7 above. The C-D system is capable of absorbing an additional 60% before it would operate worse than the established threshold. It's worth mentioning that the C-D system as laid out in the reasonable range of triplet alternatives was only capable of absorbing an additional 20%; however so that you would be able to "compare apples to apples", the C-D system was reanalyzed with the same turning lane configurations as the One-way system--the C-D system required fewer dual lefts in order to get the intersections to work and therefore had different configurations at the intersections than the One-way system.

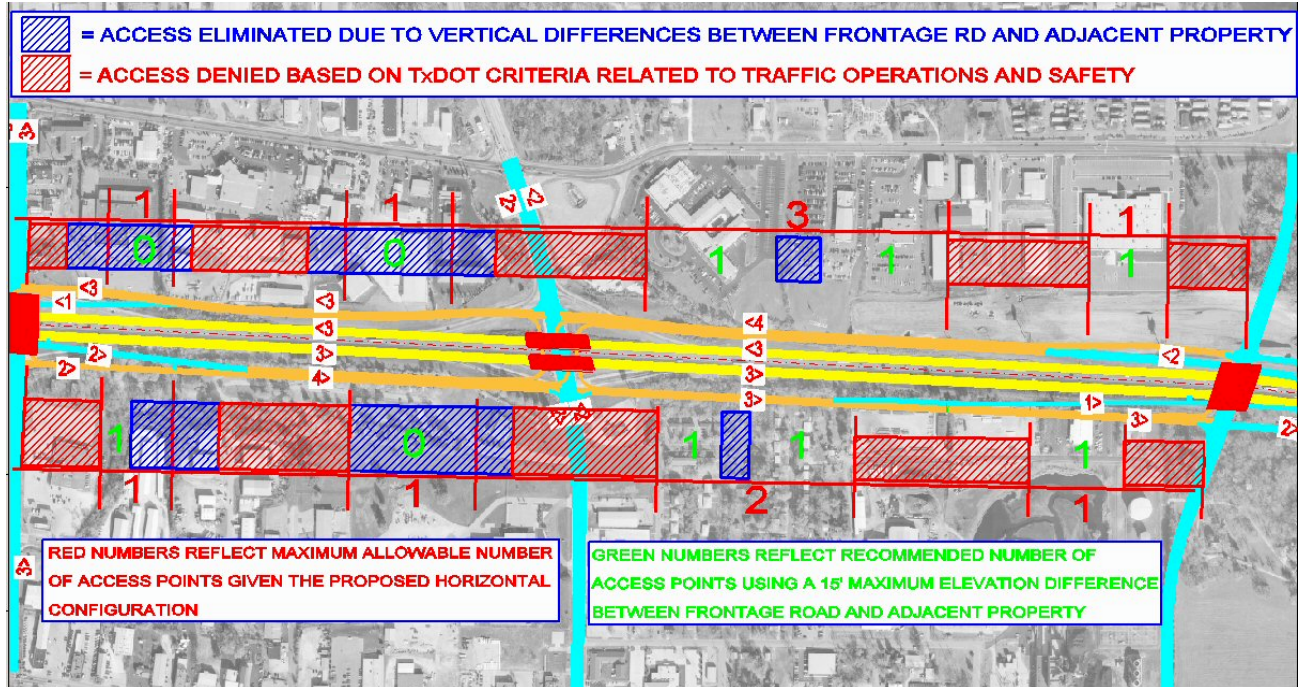
I hope this information is helpful. If you need any further clarification, feel free to contact me.

Thanks.

Debbie Leonard, EIT
Ch2M Hill
727 N. First St. Suite 400
St. Louis, MO 63102
(314)421-0313 ext.272

Appendix

Exhibit C – Potential Triplet Access Points



Appendix

Exhibit D – Listing of Businesses on Parcels Completely Taken by Foot-Print

| General Business Sector | Business Name (<i>where identifiable</i>) | Parcel Street Address | Parcel Street Name | Structures Taken |
|--|---|-----------------------|--------------------|------------------|
| Health Service | ABC Laboratories ¹ | 7200 | East ABC Lane | 1 |
| Auto Service | <i>auto service</i> | 1409 | Ashley Street | 1 |
| Eating establishment | Jack's Gourmet Restaurant | 1903 | Bus Loop 70 East | 1 |
| Auto Service | German Import Service | 1908 | Bus Loop 70 West | 3 |
| Auto Service | <i>auto service garage</i> | 1910 | Bus Loop 70 West | 1 |
| Construction/trades | Creative Surroundings | 1810 | Bus Loop 70 West | 1 |
| Lodging | Extended Stay America | 2104 | BUS LOOP 70 WEST | 1 |
| Retail | The Market Place | 1100 | BUS LOOP 70 WEST | 2 |
| Retail –auto | Auto Deal | 809 | BUS LOOP 70 WEST | 2 |
| Health Service | <i>Medical office building</i> | 2703 | CLARK LANE | 1 |
| Misc. Services | Toyko Spa | 1211 | CLINKSCALES ROAD | 1 |
| Commercial-other, Construction/Trades Misc. Services | Xpedx, Brauer Supply, USDA | 1714 | COMMERCE CT | 3 |
| Construction/trades | Star Heating & Air Conditioning | 1702 | COMMERCE CT | 1 |
| Construction/trades | Butler Elec. Supply | 1708 | COMMERCE CT | 1 |
| Lodging | La Quinta/Comfort Inn | 907 | CONLEY ROAD | 2 |
| Commercial- other/Retail | Mid-west Lube Equipment, Perche Creek Duckboats | 1112 | COSMOS PL | 2 |
| Retail –auto | <i>auto dealer/auto repair</i> | 1518 | NORTH GARTH AVE | 1 |
| Eating establishment | Captain D'S Inc | 1416 | HATHMAN PL | 1 |
| Health Service | New Horizons/NYRA House | 1408 | HATHMAN PLACE | 1 |
| Auto Service/Comm.- Other | Crane & Nichols Auto Service, Pro-Tech Consultants | 1908 | HERIFORD ROAD | 2 |
| Retail – service station | Break Time Convenience Store | 901 | NORTH HWY 63 | 3 |
| Warehouse- Distribution | NW Self-Storage | 2901 | I-70 DR NW | 1 |
| Construction/trades | Sapp Electric & Construction | 4000 | I-70 DR NW | 3 |
| Lodging | Baymont Inn & Suites | 2500 | I-70 DR SW | 1 |
| Auto Service | H&M Automotive ^{1*} | 4795 | I-70 DR SW | parking lot |
| Construction/trades | Construction and Maintenance ¹ | 5150 | I-70 DR SW | 1 + 2 garage |
| Retail | Bourn Feed and Supply Inc | 4011 | I-70 DR SE | 4 |

| General Business Sector | Business Name (<i>where identifiable</i>) | Parcel Street Address | Parcel Street Name | Structures Taken |
|--------------------------|--|-----------------------|--------------------|------------------|
| Retail –auto | Central Missouri Equipment ¹ | 7208 | I-70 DR SE | 1 |
| Retail | Diamond Furniture Inc. ¹ | 7400 | I-70 DR SE | 1 |
| Retail | Home Store ¹ | 7700 | I-70 DR SE | 1 |
| Retail | Slumberland Furniture ¹ | 8650 | I-70 DR SE | 1 |
| Retail | Furniture store ¹ | 8700 | I-70 DR SE | 3 |
| Warehouse-distribution | Teel Insulation | 1203 | LONDON DR | 1 |
| Retail | STRIP MALL – Sofas Plus, Jo-Ann Fabrics, Baltoro Mountain Outfitters | 1810 | PARIS ROAD | 5 |
| Retail | D&H Pharmacy | 1814 | PARIS ROAD | 1 |
| Eating establishment | Everett's Restaurant | 1601 | RANGELINE ST | 1 + 4 garages |
| Auto Service | Steamatic Mid-MO – car wash | 5431 | ST CHARLES ROAD | 1 |
| Misc. Services | Nilson Funeral Home* | 5611 | ST CHARLES ROAD | parking lot |
| Retail – service station | 3 gas stations & convenience store* | 5612 | ST CHARLES ROAD | parking lot |
| Retail – service station | Lake of the Wood Lil' General Store ¹ * | 5481 | ST CHARLES ROAD | 1 |
| Retail – service station | Texaco-convenience store | 1004 | STADIUM BLVD | 1 |
| Eating establishment | (former) Denny's | 206 | EAST TEXAS AVE | 1 |
| Lodging | Travel Lodge | 900 | VANDIVER DR | 1 |
| Commercial-other | Columbia Insurance Group | 2102 | WHITEGATE DR | 1 |

Italicized entries under Business Name denote active commercial parcels where the specific business activity remains unidentified.

*Business indicated that loss of parking lot would require them to relocate.

¹Business outside city limits, no city taxation applicable

Appendix

Exhibit E – Listing of Tax Exempt Parcels Completely Taken by Foot-Print

| Sector | Entity Name (<i>where identifiable</i>) | Parcel Street Address | Parcel Street Dir | Parcel Street Name | Structures Taken |
|------------------|---|-----------------------|-------------------|--------------------|------------------|
| Non-Profit | American Heart Association | 2600 | | I-70 DR NW | 1 |
| State Govt. | MoDOT | | | | 3 |
| Membership Orgn. | VFW Post 280 | 1509 | | ASHLEY STREET | 1 |
| Non-Profit | MO Pork Producers' Association ¹ | 6235 | W | CUNNINGHAM DR | 2 |
| Non-Profit | Columbia Board of Realtors | 2309 | | I-70 DR NW | 1 |
| Local Govt. | Boone Co. Fire Protection District | 2201 | | I-70 DR NW | 1 |
| Local Govt. | Parole Board, Children's & Social Services* | | | | 2 |
| Public Utility | Union Electric | | | | 1 |
| Local Govt./PU | Boone Co. Regional Sewer Line Structure | | | | 2 |
| Public Utility | Century Telephone | | | | 1 |
| Public Utility | AT&T | | | | 1 |

The parcels identified with these activities are identified as Commercial VACANT in the city's databases.

¹Outside of city limits

Appendix

Exhibit F – General Phasing Guidelines for Columbia’s I-70 Widening

DATE: May 18, 2004

TO: Lisa Petraglia/EDR Group

FROM: Kevin S. Nichols/CH2M Hill

CC: Kathy Harvey/MoDOT
Buddy Desai/CH2M Hill
Tim Page/CH2M Hill
Roy Dudark/City of Columbia

SUBJECT: Construction Phasing Considerations

CHECK APPROPRIATE JOB WITH
"X"
SIU No. 4 - J4I1341G **X**

On April 28, 2004, Lisa Petraglia of the EDR Group, representing the City of Columbia, requested an opinion on several construction-related questions. These questions are italicized below.

The discussion below is as much detail as MoDOT can commit to at this point in the study given the uncertainty of future funding levels.

MoDOT would also like to suggest that the City, through EDR, consider the economic effects of the no-build condition on I-70. This was discussed with Roy at one of the meetings, and he agreed that it was probably something that should be considered. It may be important to think about what would happen to commerce within the corridor in Columbia if MoDOT is not able to make these improvements for 20 years.

1. What might be the average length of Construction (years) for a corridor of this size?

Assuming funding was not an issue, the entire corridor (J/O to Z) might take 5-10 years, end to end, full buildout. Most of this time would be spent within the city of Columbia. However, MoDOT has stated that the construction could be phased in over the next 20 years as the needs arise at particular locations and as funding is available. One approach would be to develop a corridor construction program for delivery over that time by identifying and prioritizing a number of individual projects.

2. Is "managed chaos" over a longer period of time preferable to "total chaos" for a shorter interval for a city like Columbia?

A great deal of energy, time and thought go into the development of program (as described above) and staging plans (in what order do all of the pieces of an individual project get built). An extremely important consideration in the development of the staging is the impact on the traveling public both during and after construction, including delay and safety.

If it were necessary to pick between the two, managed chaos would be the choice. It may be better to call it managed or orderly disruption.

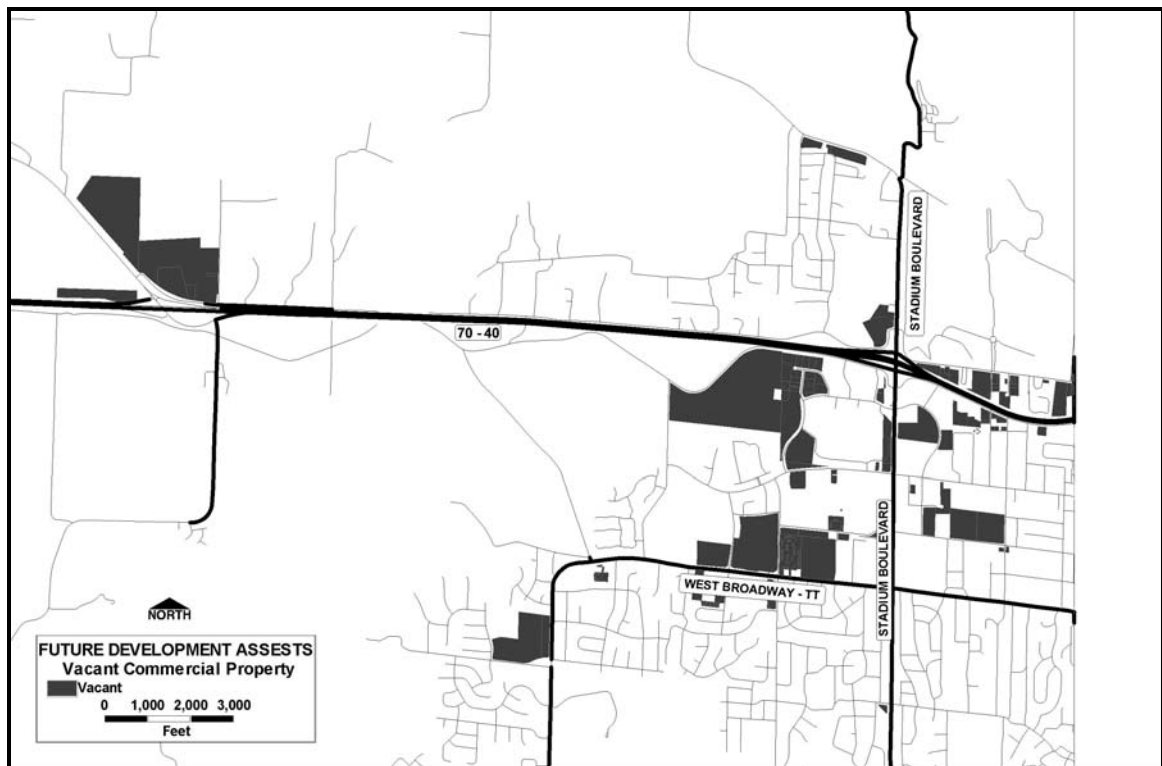
3. What might be a reasonable assumption for project phasing –sequential?

This is a suggested general approach. Each project has its own goals and needs, so the following approach may be implemented differently.

The first thing constructed would be the outer roads, followed by the bridges. Interchange ramps would be next, followed by the mainline. Not all locations, ie. all interchanges, will be under construction at the same time. Projects will be staggered and sequential. MoDOT is committed to keep four lanes of traffic moving on I-70, and to keep access to businesses open during construction. This assumes full funding for the Columbia section. If MoDOT receives only partial funding, the highest priority project would proceed. The first priority might be the Stadium interchange or the US 63/Business 63 interchange. The decision will be made based on need at the time the funding becomes available, as well as how much money is available.

Appendix

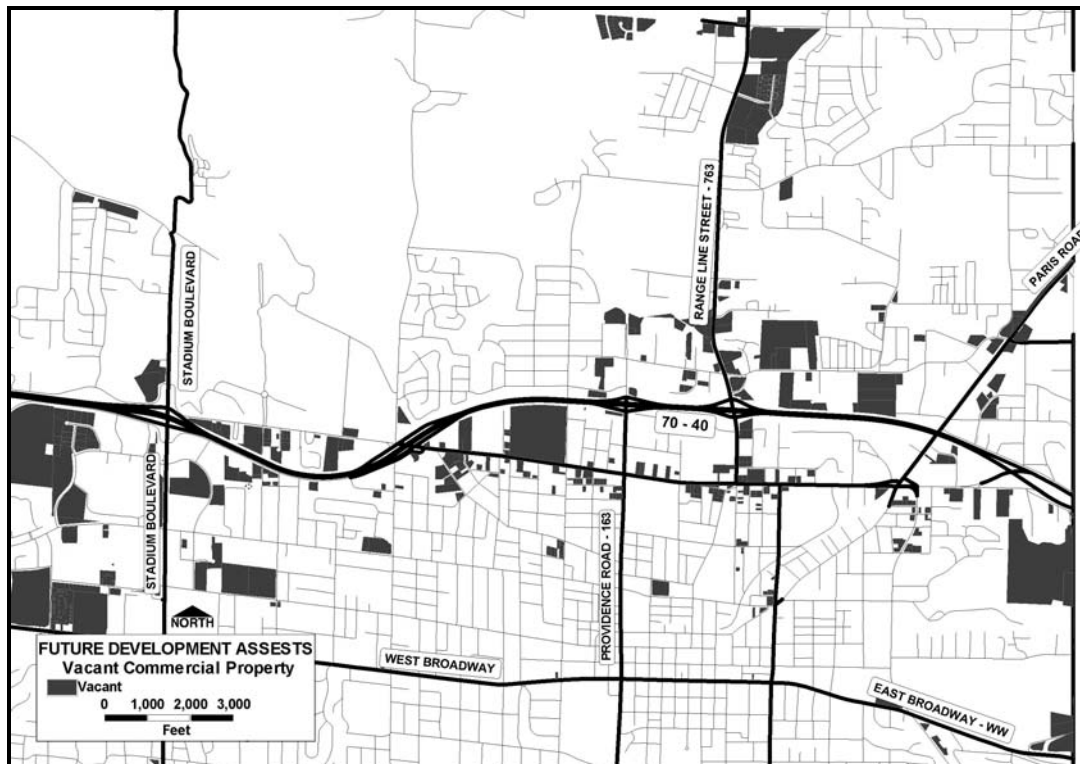
Exhibit G – Maps of Development Opportunities Surrounding Columbia's Interstate-70



Western Segment of I-70 Corridor Midway to Stadium Boulevard Interchange.

Appendix

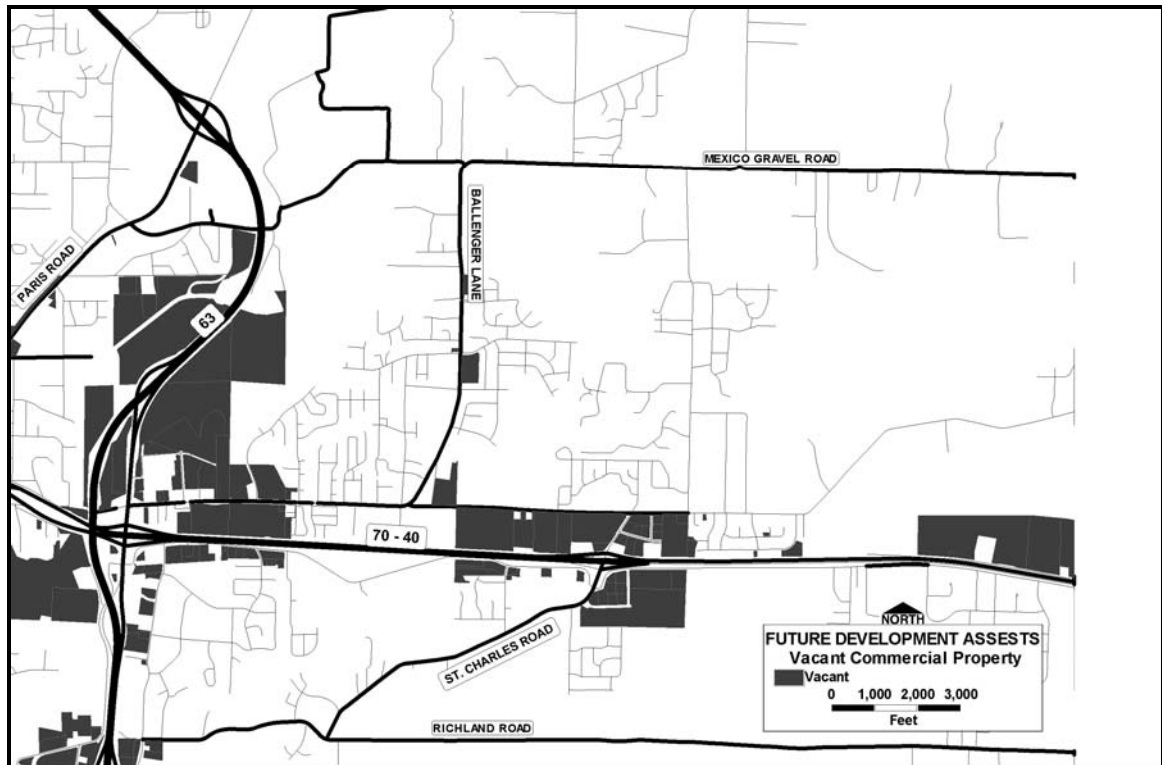
Exhibit G – Maps of Development Opportunities Surrounding Columbia's Interstate-70



I-70 Corridor between Stadium Boulevard and Paris Road (Route B)

Appendix

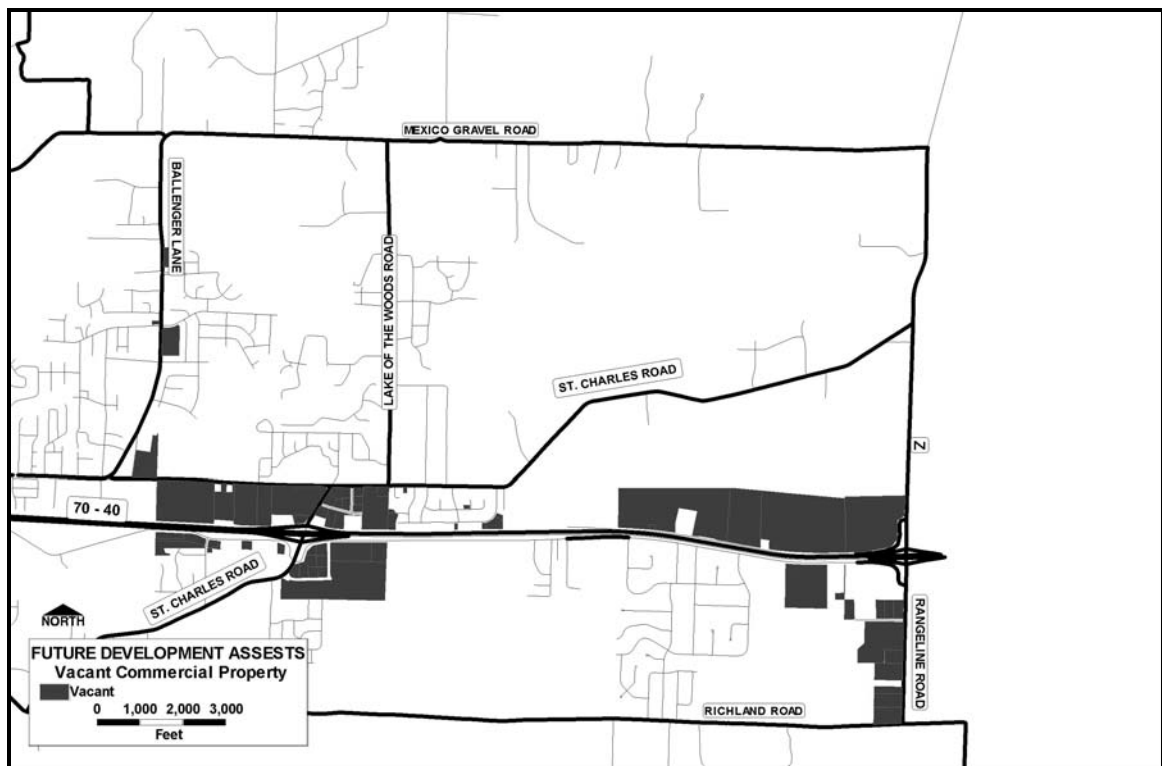
Exhibit G – Maps of Development Opportunities Surrounding Columbia's Interstate-70



I-70 Corridor between Paris Road (Route B) and St. Charles Road

Appendix

Exhibit G – Maps of Development Opportunities Surrounding Columbia's Interstate-70



Eastern Segment of Columbia's I-70 Corridor, ending at Route Z/Rangeline Road



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